THE

DUBLIN QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

MAY 1, 1869.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*An Inquiry into the Influence of Libidinous Excess on the Causation of Locomotor Ataxy or Tabes Dorsalis.* By THOMAS LAYCOCK, M.D., &c., &c.; Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology and Mental Diseases in the University of Edinburgh.

IT is not improbable that too much importance is sometimes given to sexual excesses as a cause of the neuroses classed under the term tabes dorsalis, to the exclusion of equally important and perhaps more direct causes; but I think there are signs of a tendency to the other extreme of opinion, more especially with regard to locomotor ataxy, and a danger of thus overlooking a very important practical point. Much depends upon the notion people have of what constitutes excess, which must be always relative, and whether it be looked upon as an exciting, or immediate, or a predisposing and remote cause. It is not uncommon to find diseases of the nervous system insidiously developed from some remote cause, as an injury to a nerve, and so with that under consideration. A great excess for a few days only, acting like a "shock," may manifest its consequences in the nervous system at a long distant

subsequent period. It is of importance to distinguish locomotor ataxy induced in this way from the spermatorrhea, nervousness, and nervous debility that result from solitary vice, since the sensory pudic nerves are differently excited. To this difference, indeed, may be attributed, in some instances at least, the differences in the results. In locomotor ataxy the degeneration seems to commence with the sensory ganglia and posterior roots of the spinal nerves, extending thence upwards; whereas in "nervous debility" the chief symptoms are manifested cerebrally. The following case is an illustration of the latter class:—

Case I.—*Tabes Dorsalis of the Old Writers.* Reported by Mr. J. H. Croom. J. M'D., aged twenty-five, a pipe-maker, admitted to Ward 3, Edinburgh Royal Infirmary, November 15, 1867, under care of Dr. Laycock.

History.—When about twelve years old he became addicted to masturbation, and continued the practice for eleven years—*i.e.*, until about two years ago, when he gave it up. Since then he has been subject to nocturnal emissions at the rate of three, four, or five times a week; often, however, with intervals without any of a fortnight's duration. At first he practised masturbation (he says) from ten to twelve times daily, and continued to do so for two years, when he was seized with what he calls a weak fit, in which he was affected with temporary blindness, and was confined to bed for a day or two. He then reduced the number of times to twice daily, viz., night and morning. Except a severe attack of an acute disease in childhood, he has always been well and strong. Has been of intemperate habits, getting drunk as a rule every Saturday night, but has only been continuously "on the beer" twice for about a week each time. Has usually smoked from three to four ounces of tobacco per week. Has always had plenty of animal and other food. Has followed his employment of a pipe-maker until two months ago, when he found himself unable to work. On admission the intelligence of the patient was observed to be greatly impaired. His memory was defective and he could not carry on a sustained conversation for any length of time. He sleeps very little; has vertigo and headache, and he says he "feels as if there was a constant cloud over him." Complains of persistent dull pain in left hypochondrium, in the region of the heart, and in the forehead; and of constant pain and weakness in the loins. Is very nervous and easily frightened, and has fits of despondency. All his senses normal except vision,

which is impaired. Expression of countenance anxious and vacant, that of the eyes peculiar; the eyebrows meet, the pupils widely dilated. On ophthalmoscopic examination, by Mr. Walker, ophthalmic surgeon to the Infirmary, both of the nerves were found to be in a state of atrophy. The disk of the right ovoid in form, and downwards and outwards in direction, that of the left normal. Patient is of middle height, thin, and very pallid, but not anemic. His manner is hesitating, and his gait unsteady, but he has no neuralgic pains in legs. He lies chiefly on his back.

Skin natural, lungs healthy, apex-beat of heart between sixth and seventh rib; first sound slightly accentuated; appetite good; bowels constipated. He was treated at first with the bromide of potassium. This soothed him at night for a few minutes after taking it, but no longer. The cold douche depressed him much. A combination of nux vomica and valerianate of iron seemed to be useful. But after treatment for forty days the patient became very restless and "uncomfortable" in his mind—thought he should like to make the tour of Scotland and sell pipes—and left the Hospital slightly relieved.

This case offers a group of neuroses (or functional nervous disorders) for consideration which is by no means uncommon, although the nerve-centres involved may be variously affected in different individuals. It has been attributed from time immemorial to venereal intemperance, whether associated with paraplegic phenomena or not; and is distinctly described in the Hippocratic writings under the term phthisis notias, *i.e.*, humid tabes or phthisis. The symptoms there given closely correspond with those usually attributed now-a-days to spermatorrhea. Indeed, Dr. M. Good states that the differential term "humid" was adopted expressly to indicate that kind of decline (phthisis) which results from an intemperate indulgence in libidinous pleasures, because the patient had a frequent and involuntary secretion of a dilute and imperfect seminal fluid. Lommius, taking up the Hippocratic description, termed it dorsal phthisis or decline (*tabes dorsalis*), from the weakness in the back which the intemperate indulgence in question caused. It is to be noted, however, that all the older writers mentioned spermatorrhea rather as a result of salacity, as it certainly is in cases of locomotor ataxy in the early stage, than a cause of the neuroses, and do not refer to masturbation at all. Nor is it probable that this vice was more commonly practised than the unnatural crimes so prevalent in ancient times. Perhaps it is to these latter the Greek writers refer when they remark that the

decline occurs in persons of "a salacious disposition," since they specially add—"or in those who are newly married, and have too largely indulged in conjugal pleasure."

In the case just detailed, except an unsteadiness in the legs, no affection of the lower extremities was noted. But in the kind termed progressive locomotor ataxy, in addition to vertigo, dimness of vision, strabismus, and the various symptoms attributed to spermatorrhea, there are illusive sensations and neuralgic pains in the back and legs, often extending to the arms, impotence, and a peculiar instability in walking. For a long period, and even yet, these and other affections of the lower extremities were attributed without distinction to spermatorrhea or sexual intemperance, and were also designated tabes dorsalis. Professor Romberg was the first (nearly thirty years ago) to differentiate the peculiarly unstable gait and its concomitants from ordinary paraplegia. Although he clearly described the head-symptoms, and most particularly the defects in vision and other sensory affections which accompany the ataxy, yet, finding the anatomical changes restricted to the spinal cord and to the posterior roots and columns in the dorsal region, he considered it to be a spinal disorder,—not, however, involving the cord as an instrument for the transmission of motor and sensory stimuli, but as a central organ and source of nervous power by which "the continuance and vigour of motion and sensation are secured, and a general stimulus for the entire organism is provided." To this diminution of power Romberg attributed the group of symptoms which he described under the old term *tabes dorsalis*, and the diminution of power to certain anatomical changes in the cord. M. Duchenne communicated a series of papers to the *Archives Gen. de Med.*, commencing with December, 1858, in which he described the affection described by Romberg as a new disease, evidently, and indeed confessedly in ignorance of Romberg's researches. But as Dr. Axenfeld pithily says in a letter in the *Archives* for Nov., 1863, p. 475, *deux noms, une chose.* Dr. A.'s account of the disease, in the same journal, for August and October, I may here say, is one of the best extant. The chief difference between the two inquirers is in the anatomy. Duchenne dwells more than Romberg upon the encephalic symptoms, and fixes upon the cerebellum as the seat of the disease. My impression is that both are right, except in so far as they deny or omit.

In what respects then does the old tabes dorsalis differ from the ataxic tabes? Anatomically in the progressive character of the

disease; in the former there is no progressive degeneration of the nerve tissues. In both there are head-symptoms, but it is in the onset of a progressive spinal degeneration with obscure head-symptoms that ataxy chiefly differs from the old tabes. And this is of the greatest practical importance, for the progress of the affection when once the spinal symptoms are established is so inevitable, however slow, that the diagnosis in the early stage is essential to successful treatment. Now this can hardly be established from the symptoms alone, and independently of a knowledge of the predisposing and exciting causes. Hence the value of the latter, and more especially in reference to sexual excesses. How shall we ascertain this fact? There can be little doubt that in the case just detailed early and inveterate masturbation, so plainly confessed, was a chief cause of the neuroses. Individuals differ so much, however, that some experience of the protean forms of the disorder, and of the evasions of patients, is needed to diagnose the affection when chiefly due to sexual excesses. Besides, etiologically, this is a relative term, for with this intemperance, as with intoxication, patients have not only peculiar ideas as to what is excess, but differ as to the extent they are affected by the same extent of indulgence. So that even when patients are candid, much caution is required in receiving their statements; but too often excess is concealed, and this especially when it is not only vicious but criminal. Again, difficulties in the way of etiological diagnosis are particularly experienced in those persons in whom mental disorders, like hypochondriasis and "low spirits," mask the other neuroses and turn attention from them. I think, however, the chief difficulty is in the important fact that venereal intemperance is so rarely followed at once by the symptoms, that the connexion between cause and effect is lost sight of, the effect being rather to predispose the nerve-centres to take on disease from the action of various and more immediately exciting causes, so that these are regarded as the causes and the other is forgotten or denied. The subjoined case illustrates this order of causation in progressive locomotor ataxy:—

Case II.—*Case of Progressive Locomotor Ataxy, first stage.* Reported by Mr. W. A. P. Jefferiss, Clin. Clerk. Alex. D., shoemaker, aged thirty, unmarried, admitted into Ward 1 of the Royal Edinburgh Infirmary, under care of Dr. Laycock, 26th January, 1868.

History.—Patient has had the diseases of childhood; he has been

a very healthy man, never having been a day off work from illness of any kind. Prior to two years ago he was in the habit of taking spirits very freely, but since that date has been of very temperate habits. About four years ago he contracted a gonorrhea, and had also what he termed syphilis, in the form of several hard indurated chancres on the glans penis. They were very long in healing, resisting all treatment for nearly ten months. The large scar left on the glans penis is of irregular form, and there is no induration. He had no sore throat, buboes, pains in the bones, or eruption on his body with the chancres, but he had *chordee for several weeks with the gonorrhea, and frequent seminal discharges.* The glans penis is singularly large and broad, as is the whole organ. He admits, but with some reluctance, that he has practised masturbation, and that he has indulged in libidinous excesses; not ascertained whether he be impotent. Last spring, whilst working in a cold, damp, and ill-ventilated workshop, he was troubled with wandering pains in his back. These continued for a few months, and then wholly ceased for about three months, when they began again with greater severity. They were limited to the lumbar and iliac regions, more particularly on the right side. After repeated local applications, chiefly of amoniated camphor liniment, they greatly diminished in severity, but still continued to annoy him; when in addition he began to suffer from a loss of power over his legs, so that he could not stand unsupported, and was consequently obliged to give up work. He says he could move his legs and feet with as much force as ever, provided he was sitting or lying, but on attempting to walk he had no control over his movements. About two months ago he had medical advice, but getting no better after treatment and confinement to bed for seven weeks, he came to the Infirmary.

On Admission.—He is a stout, muscular-looking man, with a heavy jaw, and anxious but intelligent expression. With the exception of weak vision, there was no defect in the special senses. Tactile sensibility was somewhat impaired in the lower extremities, and he complained of slight pain in the *right* iliac and lumbar regions. No headache; sleep good; memory and power of attention are both impaired. On attempting to walk he loses control of his legs and stumbles, especially if his eyes be shut. He says that he feels when walking as if a soft body was between the soles of his feet and the ground. When lying in bed he can exercise perfect volitional control over his legs, which are well nourished and muscular. His eyes were examined with the ophthalmoscope by Mr. Walker, who

noted optic neuritis in both eyes; more distinctly marked in the *left*, and the whole retina more injected than usual. The *right* is much the same as the left, but probably more advanced in the second stage of atrophy. Respiratory and cardiac organs healthy; tongue clean; appetite good; bowels constipated; urine normal. At first the secale cornutum was prescribed with no result. Although it was doubtful whether the man had had syphilis or not, the bichloride of mercury was subsequently conjoined, and the occipital region shaved and blistered. Under this treatment he rapidly improved for a while, so that he became able to stand and walk alone. On 17th March, being satisfied with his improved health, he left the Infirmary.

In this case there were such conditions operative on the sensory nerves of the glans penis which, by centripetal action, would induce morbid changes in the ganglia on the posterior roots, and in the posterior sensory columns. Such was the long strain on the *nervi erigentes* that induced the chordee; such also the long continued irritation of the large sensitive glans by the broad ulcer on it, and doubtless, the venereal gluttony might be rightly added. But all these are apt to be forgotten in the obvious and immediate exciting cause, viz., constant exposure of the legs to cold and damp. This exciting cause is so common that it is often noticed. Mr. Lockhart Clarke, in his able monograph on the disease in Vol. i. of *St. George's Hospital Reports*, observes "that in persons who are predisposed, almost anything that depresses the nervous power, especially of the spinal cord, may prove an exciting cause. . . . . Of all these a prolonged exposure to the combined operation of cold and damp is by far the most common, as it is probably the most certain in its effects." This fact being admitted it still remains to determine the special predisposing cause or causes, for precisely the same general exciting causes induce true paraplegia and other forms of spinal disease, and the question is left unsolved—what is that special condition of the nerve-centres (both cerebral and spinal) which so specially predisposes as to render cold available to the production of this special form of disease of the cord and brain?

The same remark applies to the alleged influence of age, sex, and heredity, which latter Trousseau dwells upon. All observers concur in stating that the disease specially affects males aged from twenty to fifty. Now this is the period of life during which the virile organs are most active; nor do the three cases mentioned by Friedreich, aged fifteen, sixteen, and eighteen respectively, invalidate

the general fact. Yet none attempt to show why males of this age are so highly predisposed, nor why females are comparatively exempt. The facts would lead to the conclusion that the disease is in some relation to male sexual function; yet the majority of observers repudiate the notion. Mr. L. Clarke, it is true, speaks of onanism as an exciting cause; and Trousseau says, without going further, "In nearly half the cases which have come under my observation there had been spermatorrhea. The seminal losses were either diurnal or nocturnal. . . . . In Lallemand's work on spermatorrhea you will find several cases of paraplegia, which were certainly cases of locomotor ataxy." Dr. C. Bland Radcliffe also observes—"In some cases sexual excess would seem to figure as a cause, but not in others; not perhaps by any means in the majority."—(*Reynolds's System of Medicine*, Vol. ii., p. 350.) Yet, of the two cases Dr. R. relates (both in sailors), he remarks of the one—"Sexually, the state may be spoken of as approaching to spermatorrhea,"—and of the other—"For the last two years the sexual inclinations have been much damped, but before this time, from what he says, he appears to have been little better than a very satyr." Doubtless it is from conclusions thus drawn that Mr. Roberts affirms, in common with others, "that venereal excesses—the acknowledged productive cause of tabes dorsalis—seem to have no special relation to the etiology of locomotor ataxia;" and that Dr. C. B. Radcliffe, in common with Trousseau and others, concludes: "In fact, it is not possible to refer locomotor ataxy to any special cause," and particularly objects to the term tabes dorsalis being used to designate it, because implying its sexual origin. Now I think justice has not been done in this respect, as in others, to Romberg. He observes—"Two circumstances that have been shown with certainty to predispose to tabes dorsalis are the male sex, and the period between the thirtieth and fiftieth year of life. Scarcely one-eighth of the cases are females. The loss of semen has always been looked upon as one of the most fruitful sources of the complaint; but this in itself does not appear to be a matter of much consequence as influencing the disease, as patients who have been labouring under spermatorrhea for a series of years are much more liable to hypochondriasis and cerebral affection than to tabes dorsalis. *But when combined with hyperstimulation of the nerves, to which sensual abuses give rise*, it not unfrequently favours the origin and encourages the development of the disease after it has commenced. When the strength is much taxed by continued standing

in a bent posture, by forced marches, and the catarrhal influences of wet bivouacs, followed by drunkenness and debauchery, as is so often the case in campaigns, the malady is rife; this is the reason why tabes dorsalis was so frequent during the first decade following the great wars of the present century."—(*Dr. Sieveking's Trans. for the Sydenham Society*, Vol. ii., p. 400.) In none of the monographs that I have read is there so accurate an account of the order of causation as this. The fact I have italicized is particularly worthy of notice. And this points to the conclusion, that to determine the exact relation of tabes dorsalis to sexual excesses, much more careful observation is needed as to the particular kind of excess, as to the date thereof, and as to the nerve-centres and nerves involved. In the true sexual affection the first stage of the disease is sometimes so exclusively neuralgic that only very close observation can discover ataxy. Now it is in this stage that close inquiry reveals the effects of *hyperstimulation* of the erotic nerves (if I may be allowed so to designate those which subserve to sexual pleasure), such as results from very frequently repeated, perhaps, bridal congress, and not merely from masturbation. I have a case now under observation in which the neuralgia is the prominent condition and the ataxia is only discoverable on careful observation and inquiry.

What is the relation of the alleged cause to that most important point in the disease, viz.: the insiduous yet progressive degeneration of the nerves and nerve-centres involved? Now there are cases of locomotor ataxy in which there is not only no progressive degeneration, but few, if any, sensory neuroses. In these, the ataxy is presented in its simplest form and as a neurosis only, and amounts mainly to a defective co-ordination of those muscles of the back whereby the legs, vertebral column, and pelvis are rendered combinedly fit for locomotion, so that when these muscles are not needed, as in lying or sitting, the patient has complete volitional control over his legs. Experience teaches that any long exercise of a particular group of muscles, such as are strained when working in a stooping posture, would so far act on the corresponding sensorial or motorial centres, that a predisponent condition might be set up such as to render cold and damp efficacious in exciting local disorder, without necessarily inducing progressive neuralgia or cerebro-mental neuroses, provided no venereal excesses have been committed. It is precisely to this class of cases that Dr. Roberts, of Manchester, refers when he remarks (in *Med. Mirror*, for 1866), "Unsteadiness of gait, from a want of power to co-ordinate the muscular contractions

of the lower limbs, is a frequent complaint in this district; but I have not observed that such cases tend to a progressive involvement of the entire muscular system, and a gradual abolition or perversion of cutaneous sensibility, nor have they been preceded or accompanied by strabismus or defective vision. The condition to which I refer occurs in persons whose occupation exposes them to excessive wet or cold—miners, well-sinkers, excavators, and more rarely those who work on a cold stone floor" (*On the more unusual Forms of Paralysis*, p. 375)—those in fact being chiefly affected who work stooping. Here then is an example of causes predisposing to and exciting simple locomotor ataxy, by acting locally on the nerve-centres.

By thus separating the primary and most essential symptoms from the others, we get a better insight into the order of development of the disease. We find that progressive increase is associated with—not the mere motor disorder—but the sensory symptoms, and that the causes of the two classes of symptoms may be and are different. Whatever tends to debilitate the co-ordinating centres predisposes to the ataxy, and this would be excessive use of those centres from any cause. Now as men are much more commonly engaged than women in those laborious employments which thus exhaust the motor centres, and are more exposed to cold and wet, they must in the same degree be more frequently affected, other things being equal. This, therefore, is one reasonable explanation of the observed differences as to frequency in the sexes. But men are also more liable to sensory exhaustion of the cord than women, for in the act of coition there is more exhaustion of those centres, and in connexion with a group of coordinating pelvic muscles. Hence it is that the true sensory form of locomotor ataxy is so often seen in vigorous virile men, desiring and capable of repeated coition.

In none of the monographs on progressive locomotor ataxy, so far as I have read, is there any examination of the etiology in relation to nerve-anatony—an important point in practice,—nor in relation to the progressive degeneration of nerve-tissue which is so essential a feature of the affection. In those cases in which venereal intemperance is a chief cause, an inquiry of this kind would necessarily be directed to the anatomy and physiology of the pudic nerves. Now, if we compare the results of this cause in the two sexes, it is obvious that in women the sympathetic connexions of the sacral plexus are chiefly involved, while in man it is chiefly the spinal sensory, and the results differ accordingly; for the symptoms

of undue venereal excitement in women are chiefly of the class vaguely denominated hysterical, and they do not manifest the character of progressive advance to structural degeneration. Looking to the state of the *nervi erigentes* as the primary cause, and to their action on the posterior roots and columns, it would be of importance to determine how far a sudden, short, yet great excess for the time is more dangerous etiologically than more moderate, albeit excessive indulgence, extending over a longer period. I have had cases in which such temporary excess had been evidently the predisposing cause. In certain constitutions, although only indulged in legitimately and for a brief period, as after marriage, such excess would act like a shock or concussion of the cord, or like a blow on the head; that is to say, would constitute the starting point for a gradually developing morbid state, as is seen when injuries to the cranium and nerves of the extremities give rise to serious chronic lesions, as epilepsy, insanity, and paralysis. It is from this point of view the predisposing cause in question assumes such importance in practice.

Recorded cases prove that after allowing for instances in which the causes could be referred to some of those just discussed, provided the history had been well ascertained, a certain proportion remains, of which the origin is unexplained by any known facts of experience. Probably a hereditary predisposition may take effect from simple causes in the offspring of persons who have not manifested the symptoms sufficiently distinctly to insure recognition; or in whom a predisposition only has been induced by some of the known causes. That heredity has some influence in causation appears to be certain. Sunstroke was apparently a predisposing cause in a case under my care, which was treated successfully by nitrate of silver. One limb was more affected than the other. Certain diseases of the prepuce and glans may predispose. Mr. Bryant reports some cases of incontinence and retention of urine in children, in whom the neurosis of the bladder was evidently due to an elongated prepuce partly or wholly adherent to the glans, inasmuch as separating and circumcising it cured the infirmities (*Med. Times and Gazette*, 16th May, 1868). The order of causation here as to the functions of the bladder is of the kind just described; it is not improbable, therefore, that cystitis and urethritis may be predisposing causes of ataxy. In a case lately under my care the history traced the development of the disease to a bad stricture.

The clue to the etiology of the typical kinds of progressive

locomotor ataxy is precisely of the same kind as that which explains the origin of sympathetic ophthalmia, and of the whole group of diseases dependent on progressive centripetal degeneration. The morbid changes commencing in the sensory periphery go on according to a general law, which Dr. Waller, of Brighton, was the first to demonstrate experimentally, and who was awarded a prize of 2,000 francs accordingly, by the French Academy of Science. Dr. Waller's conclusions have been fully confirmed by Claude Bernard and others, and by pathological investigation. Hence the law has been designated the Wallerian law. His researches enable us to understand that the cause of locomotor ataxy is primarily a degeneration of the ganglia on the posterior roots—the intervertebral ganglia. These ganglia (of which the Gasserian is one) have very important relations to the nutrition of the nerve-centres with which they are in anatomical relation; so that when the ganglion degenerates, its spinal commissure (the posterior roots) and the corresponding portion of the posterior columns are successively involved, and thence the disease extends upwards into the encephalic centres either on the same side or on the opposite, according to the kind of nerve involved. Serres (the value of whose labours were of late years too lightly estimated) was the first, in 1824, to indicate this order of events in an admirably detailed history of a case of disease of the right Gasserian ganglion, and Dr. Waller (confirmed by Claude Bernard, Brown-Séquard, and others) has demonstrated experimentally what Serres observed pathologically to be the law of degeneration of nerve-tissue.

Doubtless the pathological anatomy of locomotor ataxy (as indeed of other spinal affections) is defective, but it is chiefly so because the intervertebral ganglia have rarely been examined, attention being directed almost exclusively to the spinal cord. It is generally found that the posterior columns in the dorsal and lumbar region have undergone degeneration. In two cases, however, detailed by Trousseau, the condition of the posterior roots (the intervertebral ganglionic commissures) was observed, and they were found degenerate; and in one examined microscopically by Luys both the commissures and the ganglia were disorganized. In none of the cases have the nerves beyond the ganglia been examined. Their condition must, however, be considered one of the most important points in the anatomy of sexual locomotor ataxy if we look upon the disease as primarily an affection analogous to ordinary neuralgia of the fifth, or tic-douloureux; for in this the disorder not unfrequently com-

mences in the nerve-fibrils, and is propagated thence to the Gasserian ganglion, and so onwards along the so-called roots of the fifth to the Pons Varolii and the brain.

Starting then from these conclusions as to the origin and course of locomotor ataxy we can more definitely determine the seat of the disease, and therewith the prognosis and treatment. Obviously the chief distinction is between those primarily sensory and those primarily motor. The latter are by no means so likely to extend upwards to the medulla oblongata and the basilar centres and nerves of the encephalon, as the former, and therefore not so likely to involve the senses and the understanding.

Art. XV.—*Zymotic Diseases, as more especially Illustrated by Puerperal Fever.*[a] By Evory Kennedy, M.D., ex-Master of the Dublin Lying-in Hospital, and ex-President of the College of Physicians in Ireland.

In presuming to draw your attention to Zymotic Diseases, and more especially Puerperal Fever (a disease with which you are all so familiar, and one with which my opportunities, I regret to say, have rendered me but too conversant), I shall not weary you with unprofitable details, but at once investigate, with your assistance, their true nature, their characteristic features, and the laws which regulate their production. The tenor and purport of my observations will be directed principally to prevention; whilst I hope some hints may be thrown out in the course of our investigation that may also assist us in treatment.

In order to simplify our subject we shall begin by accepting your acquiescence in the broad principle, that puerperal fever is "par excellence" a zymotic disease.

As a motive for grappling with this class of diseases in the manner I propose to deal with puerperal fever, let us estimate the proportion of general zymotic mortality on the basis of the tables furnished by London and the other great cities of England. We may state it to be between one-fourth and one-fifth of the gross mortality; further, it may be asserted, for argument sake, that zymotic diseases result, in nine out of ten cases, from preventable

[a] Read before the Obstetrical Society, in the Hall of the College of Physicians, on the evenings of the 13th of March and 10th of April, 1869.

causes. It follows then that by the prevention of these causes the mortality may be reduced one-fourth, minus one-tenth. It would be quite possible to offer a proximate calculation of the diminution of morbility under such a reduction of mortality; but the misery, suffering, distress, and poverty to be prevented by such a consummation would be beyond human calculation. The condition precedent to such results is the acquisition of an accurate knowledge of the principles that regulate the development and spread of each disease of the zymotic type; or, at least, of those laws that regulate their primary occurrence and subsequent growth. Whether the difficulties that invest the detection and analysis of the subtle poisonous miasm, and which have hitherto baffled[a] the efforts of physicians for centuries, are to continue unsolved, is a question within the womb of time. But although the miasm or germ has hitherto escaped our detection, as recognized by its sensible qualities, its existence as an entity or such primary principle is admitted universally.

The laws that regulate its development and spread are within the scope of our observation, and we know and can handle certain morbid solids and fluids in which the poison, at least, may be said to possess its habitat, if not its essence: witness the lymph of cow pock, the puss of small pox and syphilis, and the cutaneous powder of scarlatina, &c.

In the first place, are we to ascribe the different zymotic poisons to a common principle, modified by a variation in natural or physical circumstances or conditions? The fact that diseases of the zymotic character prevail so frequently at the same time, would appear to support this opinion. Their being traceable to the same sources would further tend to corroborate it, and although they assume very distinctive characters in their development, yet the same observation holds in the varieties observable amongst diseases which belong unmistakably to the same genus, showing that *they*, at least, have been due to a common origin. With the occurrence of metria

[a] The latest claim to the detection of the morbific principle is that of Dr. Harris, of New York, who states that he has detected in cattle infected with the prevailing plague a living organism or spongiole of definite form and properties, which multiplies in the body of the infected animal. Whilst scientific incredulity is to be deprecated in investigating so obscure a subject, quite as much as accepting hastily any doctrine or theory because it is new, I confess that looking for an escape out of one difficulty by accepting another and greater difficulty, requires at least deliberation and "confirmation strong" before adoption. The difficulties attending the elucidation of the zymotic molecule or germ can scarcely, in this view, be said to be simplified by presupposing the occurrence of so questionable a postulate as spontaneous generation, be it animal or vegetable.

in hospital after other zymotic diseases have, either accidentally or endemically, shown themselves, all hospital physicians are familiar, so much so, that they look with the greatest apprehension to the result when either typhus, scarlatina, or erysipelas occurs in their maternities.

I cannot illustrate this necessity or the conclusions I have long arrived at, better than by transcribing here a question put to me by a Medical Commission, who were engaged in inquiring into the state of the hospitals and sick poor in the year 1840, with my answer:—

Query—"Does puerperal fever appear to have prevailed more extensively when any general epidemic has prevailed in Dublin?"

Answer—"Yes; I have remarked that when continued fever, typhus, or erysipelas, were prevalent in the Medical and Surgical Hospitals, puerperal fever appeared to prevail in the Lying-in Hospital, as well as in the city generally. The character of the fever varied also at different times, and occasionally appeared to be influenced in its nature by any prevalent epidemic."

So frequently has metria shown itself afterwards that it is now no longer esteemed an accidental "post hoc," but that they stand in relation of cause and effect. This fact alone goes a considerable way in confirming the idea of a common poisonous principle or miasm. Upon this subject I treated so lately in my paper on Purpuric Puerperal Fever, read before the British Medical Association in 1867, that I shall not dwell upon it further at present.

Should the principle of isomerism, which has of late attracted much notice with our chemists and professors of physical science, come to be established, the difficulties in adopting the idea of a common morbific poison would be lessened. As then the poisonous principle, which we might denominate *zymotocene*, would come to be classed as an original polyatomic molecule or principle, and would fall strictly within Dumas's[a] definition of what he terms *polymorphism*, namely—"one of those variations in the arrangements of integral molecules of a body which influence its physical properties, either temporarily or permanently."

There is nothing at all unreasonable, therefore, in supposing that, as in the case of polymeric or polymorphous hydrocarbons, we may also have the germs of different disease produced by polymeric combinations in the same elements.

[a] Lettre a M Amphere Ann de Chemie et de Phys. xlviii., p. 208.

To descend, however, from the consideration of these general principles to the special subject with which we are more immediately concerned—puerperal fever. This zymotic disease prevails endemically in crowded hospitals, where it is to be seen in its greatest virulence, and exhibiting its most concentrated fatality; although it is also to be met with in the hovels of the poor and the chambers of the wealthier classes. When epidemic, showing itself generally in our great maternity hospitals in the first instance, but not confining itself to them: like typhus fever, cholera, scarlatina, and erysipelas, it prevails endemically and like them it is contagious.

The non-contagious furor having pretty well spent itself, reason resumes her sway, and contagion can *now* be spoken of with calmness and toleration. Whereas twenty years ago the advocate of contagion was worse than an infidel.

The difficulties that beset medical men in investigating the epidemic and contagious nature of puerperal fever were simply expressed by the late Dr. Collins; when, after detailing its prevalence in the early years of his mastership of the Lying-in Hospital, and the success of the steps taken by him to lessen it, he adds—"The facts here detailed are strongly calculated not only to lead us to suspect, but even prove that this fever derived its origin from some local cause, and not from anything noxious in the atmosphere. To this I should assent," he continues, "had we not proof equally well authenticated, of its prevalence and fatality in the houses of the affluent, as already stated." If the views we have arrived at, and which we now venture to propound, with regard to the true nature of the poisoning in these cases be correct, then the contagious and sporadic nature of puerperal fever will be perfectly reconcilable. Collins's paragraph, above quoted, contains the gist of the puerperal fever difficulty in a nutshell. Its local cause approaches more nearly to a *constant* quantity in the wards of a crowded Lying-in Hospital; whereas it is only an *occasional* quantity in the houses of the affluent; and the only influence exercised in its production by the atmosphere is, that in certain states of the atmosphere, the constant and occasional quantities become *more operative* or *active* in generating or propagating this dreadful malady—a malady thus zymotic in its type and origin, produced by a poison emanating from parturient women; more active in proportion to the concentration of their excretions or exhalations, and consequently in proportion to their number cohabiting in a given number of feet of atmospheric space; but not requiring more than one parturient female to generate

it; when the poison she herself has generated may, as in the case of blood-poisoning, be re-absorbed into her own system, and self-contamination then as certainly strike her down as if a crowded ill-ventilated lying-in ward was the generating medium. The most striking parallel that we are acquainted with of the generation and development of diseases under similar conditions are, the gaol fever (a disease now fortunately little met with), erysipelas in surgical hospitals, cholera in our camps and over-crowded human gatherings, and tuberculosis as observed among the poor work people in Paris and other crowded cities, a fact that has given rise to the idea that phthisis should also be classed with zymotic diseases. In Paris, for instance, where this disease prevails so largely among the "ouvriers," it is calculated that 40,000 live huddled together in "chambres garnies," or furnished apartments, containing from eight to ten beds in each. The confining apes in close ill-ventilated menageries generates tuberculosis in these animals, apparently from similar causes; and glanders, a purely zymotic disease, produced by crowding horses together in ill-ventilated stables, furnishes us with a further example. Of the parallel with erysipelas, pyemia, hospital gangrene, and what we might term generally "hospital malaria," we shall have occasion to treat more at large when alluding to traumatic metria.

In distinguishing between puerperal fever or metria and its congeners, it will be unnecessary to my present practical audience to dwell upon afterpains, hysteralgia, or what I used to denominate to my class peritondynia or gastralgia; but peritonitis and metritis may require a passing notice. Such cases, in the pure form as we see them occur unconnected with deliveries, are occasionally to be met with, and may be known as partaking more of the character of local inflammation without zymotic indications. These are the cases that will bear depletion best, and the use of the lancet is too much neglected in them. Twelve to eighteen ounces of blood extracted from the arm, followed by eighteen or two dozen of leeches, will often relieve and subdue all inflammatory symptom, and the pulse that was hard, contracted, and compressed, will, as in ordinary peritonitis, rise to a more rounded resistance under this treatment.

The distinction I should draw between this form of disease and true metria, is that in the latter there are the characteristics of blood poisoning, the shrunken features, the depression, the unmistakable expression of countenance that the practical obstetrician cannot be deceived in.

In true puerperal fever of the present day the use of the lancet is rarely admissible; local depletion must be our sheet anchor. But in having recourse to it the secret of success is to reduce the pain by repetition of leeching before reaction has had time to establish itself.

The physician should see his patient every six or eight hours after the first attack; and if he find that his first leeching has not enabled the patient to bear pressure and relieved her from pain, he should at once apply more leeches before reaction is established, and so on as long as the pulse will indicate the propriety of further abstraction of blood.

Allowing, according to circumstances, a longer interval between each leeching as he finds the necessity become less urgent or the state of the circulation less indicate its propriety. A neglect of attention to this rule has often, to my own knowledge, caused patients to be snatched away by this fatal disease, who, in the hands of less hesitating or more energetic practitioners, might have been fairly reckoned upon as surviving. I know no more harassing trial to the consultant, in these cases, than to have been called into and assisted in subduing, the acute symptoms by prompt and energetic treatment, and then, when matters have improved, to be relieved from attendance under the impression that the danger was over, only to be recalled to see the patient, perhaps, forty-eight hours later, beyond the reach of treatment, from the inflammation having been again allowed to creep on to an impending fatal issue. This has occurred so frequently in my own case, that it left me in doubt whether, for my peace of mind, I should not refuse altogether to see such cases in consultation. Let my younger, and, indeed, my older, hearers be advised by me, whenever they think it necessary to divide the responsibility in such cases, to make the consultant sustain his share of it, until *he* pronounces the case out of danger. This is only fair by the physician in attendance, as well as by consultant, as a contrary practice is sure to recoil upon the ordinary attendant, in case of a casualty. Another practical hint I would wish to impress upon my hearers is, as to the use of mercury in these cases. There is no doubt of its efficacy if you can produce its specific effects; but, in the worst cases, there is not time for this, and indeed the system seems to be insusceptible.

When peritonitis or metria were to be anticipated, as when the disease was prevalent, after manual interference, in labour, or for the removal of the placenta, my habit was, to commence at once after

the labour was completed, with small and frequently-repeated doses of mercury, say a grain or half a grain of grey powder every third or fourth hour, and even applying in more suspicious cases mercurial ointment to the arm pits and groins. By these means, without disturbing the patient's system to any serious extent, in the course of forty-eight or fifty-six hours a slight mercurialization may be perceptible, often before the time at which the disease could grapple the patient; and then, should metria or inflammatory symptoms show themselves, by pressing mercurials a little more freely the system may speedily be brought under its specific influence, and the disease be thus easily checked if it had not already been prevented. I have only on one or two occasions seen puerperal fever prove fatal after mercurialization showed itself, and in them the action was incomplete. But, on the other hand, how often have I seen mercury in every dose fail in producing the slightest approach to its specific effects? I fear the answer to this question would exhibit a fearful array of baffled remedial efforts. I may mention, however, as apparently contradictory to this view a case that occurred under my care, in the Lying-in Hospital, of a woman who came in under the influence of mercury, which she stated she had taken only to the extent of three pills, as what she termed "sweetners;" and yet this woman was attacked with metria on the third day, and the attack proved fatal. Whether this was due to the fact that speedy ptyalism is not always a proof of constitutional mercurialization or to the failure of the prophylactic, my hearers may be the best judges.

In dealing with metria the two-handed treatment, that of relieving local inflammation, whilst we support the constitutional powers—the strength and the circulation, by administering food easily and rapidly assimilated into the circulation, are the two chief indications, the latter just as essential as the former; and, in the true *metria*, or well-marked zymotic puerperal fever, by much the most important of the two. It must never be forgotten that the zymotic metria, *especially*, as we see it in hospital, is a *poison fever;* and no matter how severely it sets in with local distress and anorexia, that it is essentially a disease of debility, passing more or less rapidly into a state of collapse; consequently, that however depletory our treatment may be to check or restrain local distress and lesions, we must look steadily forward and provide for the coming issue—collapse and sinking from exhaustion. Our treatment must, therefore, be directed to that, and nutritious broths,

jellies, milk, and farinacious food should be as freely given as possible, compatible with their being retained on the stomach. The same observations apply to stimulants, but they require more judgment in their administration, and, as a general rule, must be given as we observe their effects to be satisfactory.

On the whole, however, I have little doubt that they are given too *sparingly* and delayed too *long* in their administration—delayed, in fact, until the patient is absolutely sinking, when the stomach will not retain them and they produce no reaction. There is, however, a form of this disease which I ventured to describe many years ago, in which the symptoms of marked collapse and exhaustion set in early, accompanied with tympanitis, showing an exaggerated train of symptoms from the very commencement—countenance sunken; pulse small, rapid, and compressible; but this state not always accompanied by a corresponding amount of abdominal pain. I described this form as allied to the class of cases described by Laenec under the term "Factitie Debile." Now, in this case we cannot commence our stimulants too early, and can scarcely administer them too freely. It is incredible the quantity both of stimulants and nutriments that this class of cases will take. It is the form in which turpentine treatment best agrees. It seems to be one in which the intensity of the poisoning and the extent of the inflammatory lesions bear no relative proportion, or rather are often to be found in an inverse ratio, *post mortem* examination showing in them only slight effusion; sometimes merely a gelatinous effusion behind the peritoneum in the cellular tissue; perhaps only a large flabby uterus, with intense tympanitic distension, and often little or no effusion in the abdomen, pleura or other cavities, nor any lesion of veins or uterus.

I recollect a case of this kind attended about three years since in consultation with the late Dr. Hardy and Dr. Mitchell. We left the house on three occasions, scarcely deeming it necessary to make a fresh appointment, the patient's dissolution appeared so imminent; and yet she recovered perfectly and speedily, and with little or no resulting inconvenience, and is now a strong healthy lady. In this case the lady consumed two bottles of wine, a quart of beef-tea, and a pint of brandy in 24 hours.

In describing the varieties assumed by metria, we would denominate one what we should term traumatic metria, or that occurring as the result of injuries, operations, and lesions of any kind during the delivery. In this way, when zymotic metria prevails in

hospital or in private, we know that operations or lesions that could at other times be calculated upon, as productive of little or no inconvenience, almost doom our patients either to fatal or alarming illness. The use of the forceps, of the crotchet, rupture of the perineum, abrasions, slight lacerations or injuries in the vagina, nay, even the use of the lancet in venesection, are thus followed by metria, often of the most indomitable character. In fact, the air of the maternity becomes charged with a poison, in many respects similar to what we observe in our surgical and military hospitals. In this way erysipelas, pyemia, arthritis, diffuse inflammation, phagedena, or hospital gangrene, run their course of havoc, exactly as in the operation wards of surgical institutions. The year 1838 was replete in the Dublin Lying-in Hospital with these traumatic cases. I drew the attention of the British Medical Association to some of their varieties at their meeting in Dublin in 1867; and showed drawings made at the time by Kirwan, Conoly, and myself. I shall here give a case of traumatic puerperal gangrene, combined with cerebro-spinal symptoms and purpuric discolourations that occurred in that epidemic.

Margaret M'Gouran, aged thirty-two, who was doing well for two days after her delivery with the forceps, in consequence of tedious labour, was attacked on the morning of the 2nd of March, 1838, by cerebral symptoms, with rapid pulse and slight abdominal tenderness. Her excitement was so great that she became unmanageable, and was obliged to be restrained in bed. She complained incessantly of pains in her legs. The whole surface of the body, but more especially the face and lower extremities, became livid. Large blue coloured bullæ, or vesicles, appeared on different parts on the lower extremities. The excitement subsided in a few hours into a state of depression, and she sank at noon on the 3rd, about twenty-eight hours from the commencement of the attack. Only an abdominal examination could be obtained of this case, when a small quantity of bloody serum was found in the peritoneal cavity, and some sloughing in the vagina. The subcutaneous cellular tissue of the body was the seat of congestive infiltration, this was particularly evident when a section of the adipose wall of the abdomen was made and the left lower extremity was livid.

The black serum brings to recollection my old friend Dr. Alison's case of the black fluid in the blistered vesicles.

Those who have had an opportunity of seeing this class of case

will bring to mind that in arthritic metria the joints are generally secondarily affected, and that at intervals of several days, nay often of weeks after the peritonitis or metritis has run its course. It was not so in several of those, which I might term thundering cases of arthritis that occurred in 1838. On the contrary, the joints were the first organs attacked, and the knee, the elbow, the ankle, the wrist, but above all, and the most violent of all the sacro-iliac synchondrosis, assumed in turn the lead, as the structure attacked. In some there occurred erysipelatous inflammation of the buttock. The torture attending these arthritic forms is extreme in all cases, but in that where the synchondrosis was engaged it was absolutely intolerable. The fullest opiates failed to afford relief, and violent as was the outburst, and extensive as was the structure engaged, although some of them proved rapidly fatal, others yielded to treatment: but only to that of the most prompt and decided kind; namely, the application of superficial caustics and escharotics, but chiefly to the free use of the actual cautery. Those cases in which lesions occurred in labour, as lacerations of the perineum, were attacked with hospital gangrene, when the free use of caustics and mineral acids, with chloride of soda lotion and antiseptic poultices, were useful. Erysipelatous inflammation of the buttock proceeded in more than one case to gangrenous sloughing and in another of this kind, although the ankle and knee were both extensively engaged, the woman recovered.

Bold incisions were made in some of these cases, under the advice of the late able and distinguished surgeon Abraham Colles; but the result was not satisfactory, and uncontrollable hemorrhage even followed their use.

The last variation of type, observed as a genus, of the general family of metria, to which I shall direct your attention, is what I designated in a paper read at the meeting of the British Medical Association, "Puerperal Purpuric Fever." I described it as a disease of peculiar malignity, that appeared in an endemic attacking the patients in the Lying-in Hospital, in December, 1837, then under my care, and which carried off thirty-five patients between that month and the month of April, 1838.

In a certain proportion of those attacked, symptoms exhibited themselves unlike what had hitherto been observed in metria. Those symptoms corresponded in their characteristics with what Dr. Marston clearly described in his two classes of the disease so

unfortunately denominated the "Black Death," and which attracted so much attention two years ago in this country,—Firstly, those expressive, as he justly terms it, of profound blood poisoning; second, those of cerebro-spinal irritation.

Owing to some mismanagement, the coloured illustrations that were to have appeared with this paper, have been mislaid, in their transmission from Edinburgh to London, and the publication of the paper was delayed in consequence.

PUERPERAL FEVER, WITH RAPID COLLAPSE, PRECEDED BY CEREBRO-SPINAL IRRITATION, 1838.

Case I.—Anne Whelan had been drinking a large quantity of spirits before admission. In the progress of her labour she had convulsive twitchings of the arms, and tremulous motions of the hands, and a slight convulsive paroxysm. This woman made no complaint in the course of the day after her delivery. She appeared to sleep through the night, but was found, at the next morning visit, in a state of collapse, with her abdomen tympanic. Stimulants, externally and internally, were freely administered, and she died in six hours.

The only morbid appearance revealed, on a *post mortem* examination, was a small quantity of serum, tinged with blood, in the peritoneal cavity.

Case II.—Mary Sheridan had rigors on 17th January, 1838. Pulse 120. No local pain—(three days delivered). On the 20th, at two o'clock in the morning, had an attack; pronounced hysterical, with marked globus; crying and laughing. At eight o'clock she fell into a state of stupor, with stertor, and remained comatose until four p.m., when she expired.

Post mortem appearances.—The omentum and peritoneum opaque and covered with lymph; a pint of milky serum in peritoneal cavity; lungs coated with plastic lymph, congested and crepitating. Both pleural cavities filled with flaky lymph adhesions; transparent serum in pericardium: right auricle filled with fibrine; blood fluid; uterus soft and easily torn; ovaries embedded in lymph; subarachnoid effusion and effusion into ventricles.

The dissection here fully evidences the existence of puerperal fever. Now, this fact becomes the more important when we draw the analogy we attempt between the recent typhus and the puer-

peral epidemic of 1838 Sheridan's case is one of several that have occurred to me in puerperal fever, in which the hysteric complication furnished an unfavourable prognosis. The same fact has been dwelt upon by Cheyne and Graves, and more recently by Hudson, when hysteria occurs in fever. The latter astute physician connects its occurrence with suppression of the menses.

The next case we shall give is one in which head symptoms were also very markedly observed to complicate the fever, which ran to a more chronic form, with consecutive arthritis.

CEREBRO-SPINAL PUERPERAL FEVER, FOLLOWED BY ARTHRITIS.

Mary Lynch, delivered on the 30th January, 1838, was attacked by rigor on the 3rd February, with febrile symptoms; much flushing; pulse 130; some abdominal pain.

On the 4th delirium set in, with great restlessness, anxiety, and spasmodic respiration, headache, and rapidity and indistinctness of articulation.

5th.—Delirium continues, with headache, more distressing in occipital region. She struggles to get out of bed. Tongue streaked red; peculiar exhalation from tongue and mouth; sickness.

6th.—Violent and incoherent muttering, but answers rationally when addressed; pulse 136.

7th.—Raving and starting; a quantity of vapour issuing from the mouth; less complaint of head, but complains of abdominal pain, and of pain in left arm; pulse 144.

8th.—Slept well; no delirium; asks for drink; pulse 136; elbow-joint engaged; tender, swollen, hot, and red; stick nitrate of silver freely applied to it.

9th.—Delirium returned in the night; stupor and muttering; elbow more swollen; left knee and bursa engaged; retention of urine.

On the 10th the arthritis extended to the wrist; diffuse inflammation seized upon the buttock and the parotid gland; and the case assumed the characters of consecutive arthritis, and terminated fatally with effusion into pleura, on the 15th.

We have now to deal with the dark discolouration observed in these cases. The whole question of these, as well as in puerperal typhus, purpuric typhus, purpura, as in cholera, demand elucidation.

The hemorrhagic and scorbutic complications, to which it is referred, give us little assistance, and, with Flint, I have little doubt

that its explanation must be looked for in the capillary system, and perhaps in the blood itself.

FEVER WITH BLUE DISCOLOURATION OF SURFACE.

Mary Carton, aged twenty-seven, was attacked on the 11th of April, 1838, three days after a natural delivery, with aching abdominal pain—quick pulse, and high state of excitement. On the 12th, pulse 134; expression of countenance bad; hands and feet blue.

13th.—Blue tint extends to face and trunk; pulse almost imperceptible; respiration gasping; little abdominal suffering, unless on pressure.

14th.—Sinking; died at ten a.m., fifty-six hours ill. No *post mortem* examination permitted.

PUERPERAL FEVER, WITH DISCOLOURATION OF LIMB, VESICLES, GANGRENE, AND COLLAPSE.

Biddy Fox, aged thirty, was seized with rigor, followed by febrile excitement on the 5th May, 1838—the fifth day after her delivery of a seven months' child, caused by fright. She had only been three hours in labour. The fever continued without any local affection or abdominal tenderness throughout the 6th, and at three a.m. of the 7th, she was seized with acute pain in the calf of the left leg. At morning visit her state was as follows:—Countenance anxious, and expressive of suffering, and great constitutional disturbance; pulse small, 96; calf of leg swollen, tense, and acutely painful on slightest touch; no pain up thigh, but some uneasiness on deep pressure, low on left side of abdomen; skin hot; constantly crying about pain of leg; twelve leeches were applied to calf of leg; at one p.m. the limb became discoloured, the discolouration gradually extending up the thigh and down to the ankle and foot, where vesications rapidly formed. Some punctures were made in the calf of the leg and popliteal space by my able colleague, the late Surgeon Abraham Colles, in search of matter; but the pulse became rapid and indistinct, and she rapidly sunk, and expired at seven p.m., fifty-six hours from the occurrence of the rigor, and sixteen hours from the seizure of the limb. The femoral and tibial arteries continued pervious throughout, and the temperature of the left limb was higher than that of the right.

No examination permitted.

PUERPERAL FEVER, WITH GANGRENE OF UTERUS: SYMPTOMS PRECEDING DELIVERY.

Mary Anne Brennan was admitted at 11 a.m. on the 8th Jan., 1839, in the ninth month of gestation. About two o'clock the pupil on duty reported that she complained of great pain in her right thigh. On examination it was found large, tense, very painful along the course of the rectus muscle; but tenderness did not extend upwards as far as the saphena vein. There was also some soreness in the right iliac fossa. Pulse quiet and small; tongue furred. States that about a week before she had had a rigor, followed by sudden loss of power in right leg, and that yesterday she had another shivering fit. Twelve leeches were immediately applied to the limb, and within an hour she expressed herself much relieved. At half-past five o'clock p.m. she was conversing with the nurse, when she was observed suddenly to sink, her arms becoming powerless. Notice was immediately sent to the assistant on duty, who found her pulseless, eyes glazed, feet cold, features collapsed—in fact, moribund. Stimulants were administered, but she expired in a few minutes.

The Cæsarean section was performed, and the child removed, but it exhibited no signs of vitality, nor could its heart's action be detected at the moment of the mother's death.

On drawing backwards the abdominal parietes, the ovary and Fallopian tubes, particularly on the right side, were gorged with blood, and the structure of the uterus in their immediate neighbourhood was dark and softened—in fact, in a state of ramollissement. The fimbriated extremity was glued by soft, freshly-effused lymph to the peritoneum.

The following cases, passing into erysipelas, purulent depôts, cellular sloughs of the character of anthrax, and arthritis, show more strikingly how puerperal fever, like typhus, is ascribable to a poison which vitiates the blood and passes through a series of consecutive states, due to what are termed poison depôts in various parts of the body:—

Mary A. Keating was seized, on the 10th of December, 1837, with erysipelas of the elbow-joint, on the tenth day after her delivery. The solid nitrate of silver was freely applied to it, with relief. The buttock became engaged on the 12th, and the nitrate of silver was freely applied. The pain, which was intense, was relieved. She had much prostration, diarrhea, and rigors, at

intervals, and great nervous anxiety. Potassa fusa was now applied to the buttock.

The inflammation here became circumscribed, and, on the 17th, the sterno-clavicular articulation became engaged. Not until the 29th could matter be detected in the buttock, when a puncture was made. Some matter escaped, and ultimately a mass of sloughed cellular tissue separated. She gradually improved, the joints engaged, returning to their natural state, and she left the hospital on the 4th of January, becoming convalescent.

The hopeless character, however, of the more urgent cases, in which the large joints and adjacent structures take on this poison action, may at once be seen by looking at the specimens, which exhibit the trochanter eroded by ulceration, the two hip-joints engaged, the sacrum in a state of destructive ulceration, whilst the soft parts of the upper part of the thigh and gluteal muscles were in an advanced stage of ramollissement, and those on the left absolutely sphacelated. Surely, if ever the true εσθιομενος of the Greek fathers in medicine, justifying the synonym of the Latin, *exedens*, *depascens*, *corrosivus*, is to be found in modern pathology, we have it here.

Sydenham and other authorities have long established the fact that fever at different times and places may be characterized by peculiar and various local tendencies. And science, it is remarked, is no better prepared to explain their occurrence now than at any past period in medical history. By some, these varieties are merely considered complications or inter-current symptoms; by others pathognomic essentials, which justify the conclusion that the diseases are distinct in cause, symptoms, history, and pathology, and ought, consequently, to be so in name. In investigating both the predisposing and occasional causes which exist without the body of the diseased person, the "*circumfusa*," "*ingesta et applicata*," arising from the influence of external bodies, we too frequently lose sight of the assistance to be gained from the study of "Epizotia" or diseases of animals. In epidemic and contagious diseases this is much to be regretted. It was long since remarked by Guersent, that the circulatory and nervous systems of warm-blooded animals approach nearly to our organization, and their diseases present an analogy with ours. "The essential and symptomatic fevers ascribable to excitation of the nerves and blood-vessels, and the reaction of these organs upon each other, occur in them, and especially in the mammalia, with the same characters and almost the same names.

The resemblance between *their* maladies and those of *man* are sometimes so perfect, that it is impossible not to place them in the same "nosographic câdre," and not to assign them the same name. The discrepancies of opinions upon a name to be appropriated to the late epidemic might have been reconciled or harmonized had the phenomena observed in some of the epidemics which have prevailed amongst animals been looked to. For instance, in the epidemic typhus which prevailed amongst horned cattle in France in the year 1795, as well as in that of 1814, M. le Professeur Dupuis constantly observed "that the spinal marrow was more injected and soft than natural, the meningeal coverings were red, and contained in their folds a large quantity of limpid and transparent serum, and, in the lumbar region, the medulla was softened, and the cellular tissue of the lumbar and sacral nerves gorged with blood-serum. The brain in these animals dying of typhus was not so often observed softened as the medulla, but sometimes the meningeal coverings were more injected and red, and the ventricle often filled with a quantity of citrine serum."

Cerebral symptoms have also been observed in epidemic catarrh of dogs, assuming, in its progress, the form of epilepsy, or dance of St. Guy. Edward Jenner tells us of a gentleman who killed several of his dogs labouring under this disease, supposing it hydrophobia. Dissection displayed a soft brain; the ventricles full of serum, and the medulla softened, and fluid in its membranes. The "epizootic charboneuse" or typhus of domestic fowl, which prevailed in Paris in 1780, and whose chief complications were gangrenous angina and ophthalmia, was accompanied with convulsions of the wings, and other parts of the body, and the bird expired after a rattle of a peculiar kind, apparently convulsive, which resembled a plaintive cry proceeding from the bottom of the throat, not unlike spasmodic croup. On dissection, the brain was found gorged with blood, the interior of the bill and pharynx and external parts gangrenous, and ecchymosis in the different viscera.

We adduce these cases to show that, in the animal as well as man, modifications of known diseases occasionally occur, as in the puerperal cases observed by me in 1838, as well as in the latter cerebro-spinal cases *intercurrent* with the ordinary disease. The original type or generic characters prevailing and existing, whilst the varieties assume a more less prominent position, throughout its progress. Where these occur, as we might say, accidentally, in a peculiar epidemic, as, for instance, in the five cases of parotiditis out

of thirty-five recorded by Dr. Flint, and leave no permanent distinctive features, merely cropping up sporadically subsequently; they should be treated as complications due to causes in operation at the moment, evanescent in their nature, and in no way necessary to characterize the case, therefore, unworthy of a special name. When, however, on the other hand, we have a train of symptoms nearly constant in their occurrence, such as a peculiar eruption present, a peculiar structure engaged; non-contagious in its nature, not transient, not accidental in its occurrence, but permanently established amongst us, and traceable, as it is often, to cognate causes; then, I think, we must grant such a train of symptoms a right to be considered a distinct disease, and endow it with a special name, as we have done in the case of typhoid or enteric fever.

It remains still to be proved whether the group of symptoms observed to occur in the recent epidemic, shall recur and become permanent, as has been the case in enteric typhoid, or whether they shall assume those distinctive marks which have so isolated the latter disease, the very name applied to which evinces that it exhibits generic characters that assimilate it to a parent type.

The non-recurrence for nearly thirty years of an epidemic exhibiting the same characters as the cases described by me in this paper as puerperal typhus, would lead us to hope that such may possibly be the case as regards the recent epidemic also, and, consequently, that, failing in its element of permanency, it might only be referred to hereafter as a form of typhus prevailing in the spring of 1867, and limited to a small number of cases, attended with cerebro-spinal symptoms, discolouration, and collapse, and which may take its place with the puerperal typhus of the Dublin Lying-in Hospital of 1838, with epidemic typhus amongst horned cattle in 1795 and 1814, and with the typhus charboneuse in domestic fowl of 1780—all of which partook more or less of the same pathognomic characters.

It will be recollected that in the commencement of this paper we stated we had in view two practical objects—the cure and prevention of puerperal fever—but that the latter should occupy our special attention. To deal with both required a knowledge of what we termed the principles of the disease, or, more correctly, of the laws which observation and comparison satisfy us are those which govern it in its occurrence and recurrence.

We further stated that it was a disease purely zymotic in its character, consequently subject to the laws which hold in zymotic disease.

We stated as a motive to our investigation that growing knowledge had led to the conviction—a conviction every day strengthening—that zymotic disease is, in a great measure, preventable.

Hitherto we have been occupied in describing the varieties of metria with which I myself have been made familiar; and as it is of the utmost importance that no misapprehension, confusion, or deception should exist upon the subject, I wish it to be understood distinctly that every form of the disease described by me partakes of the zymotic character, is subject to the laws regulating this family of diseases, is capable of extension in the same manner as endemic, epidemic, and contagious disease, but, above all, that (by proper means) it *is preventable.*

Now, as it is impossible to be too explicit on this subject, where so much is at stake, we shall state that whilst we cannot, of course, object to the subdivision of diseases of the same type according to the structures engaged, for the sake of classification, we deem it quite important, for the sake of treatment, but, above all, of prevention, that diseases, especially of the zymotic type, should be so classed and arranged as to identify their common causes, predispositions, origins, treatment, and means of prevention. We mention this because the neglect of this rule renders our treatment empirical, frustrates our elucidation of the principles which develop the disease, prevents its recognition, and perpetuates its ravages.

We shall therefore classify the whole family under the head of "zymotic metria," in preference to that by which it has been hitherto received, of "puerperal fever;" and under this common head we shall treat, as modifications of the same disease, puerperal fever, metritis, peritonitis, pleuritis, phlebitis, arthritis, pyemia, purpuric, or cerebro-spinal metria, traumatic metria, erysipelas, and hospital gangrene.

This I feel fully justified in doing, because I have traced one and all of them to the same contagium; several of them have prevailed in the same patients, and again and again in different patients at the same moment, under my own observation, when the hospital under my care was charged with the same zymocene; the varieties cropping up in adjoining beds, and referable, as in the traumatic form, to circumstances and causes traceable at the time.

Again, in the cases successfully treated, it will have been observed that the same treatment has been successful with all, supporting the strength, meeting local inflammation by mercury, local depletion, counter irritation and turpentine, issues of different kinds, and the decided but judicious use of stimulants.

The task now remains to us to state to what this contagion is due, or rather upon what combination of circumstances it depends; and in order to do this we must establish certain propositions:—

1. That puerperal metria is due to the absorption of a poison by the parturient female.

2. That this poison may be generated by any parturient female; and, where the circumstances are favourable to its imbibition, it may be absorbed into the system of the generator or that of any other parturient female exposed to its influence.

3. That the generation and absorption of this contagion is in a direct proportion to the number of parturient females cohabiting at their parturient period, or who breathe the same atmosphere when lying-in.

4. That in lying-in hospitals, where large numbers of patients are delivered under the same roof, this disease finds its habitat, appearing and reappearing at uncertain intervals.

5. That its appearance, although apparently capricious, is not infrequently traceable to the occurrence of other zymotic diseases, to a general unhealthy state of the hospital, the labours for some time being succeeded by bad recoveries, before the true zymotic metria exhibits itself.

6. That it is produced by contagion, long experience proves, following in the steps of certain practitioners, whilst others are totally free from it, and that in the same locality.

7. It is endemic, confined in its occurrence to certain localities.

8. It is not only confined in its occurrence to a given hospital, but it is observed to haunt certain wards of the hospital, and this to such a degree that I have been obliged to close up for many months wards in which it established its special habitat.

So much for our positive proposition.

Now for the negative; and whilst we freely admit that negative evidence is less valuable, we look upon it that here it is essential to complete the chain of reasoning.

9. Zymotic metria is not a disease peculiar to parturient women

confined in their own houses, occurring comparatively rarely among them.

10. It is not a disease observed to occur in small lying-in hospitals or cottages where only one or two patients cohabit in their lying-in.

11. The just and inevitable conclusion from the foregoing propositions is that by continuing the system of large lying-in hospitals we are causing the death by zymotic metria of a number of patients for one that would occur under any system that would secure the separation or isolation of women in their confinements.

12. But as hospitals possess advantages facilitating the cure of patients and as schools of instruction, it is quite possible to combine these advantages with those of the separate system by means of grouped but isolated cottage or pavilion hospitals, with only one, or, at most, two beds in each isolated room.

13. That consequently with our present knowledge of puerperal fever the conclusion is inevitable that the mortality among parturient women would be greatly lessened by an alteration in the construction and arrangement of lying-in hospitals.

As I have already dwelt sufficiently upon the first and second proposition in the first part of my paper, we shall now confine ourselves to the description of the subsequent propositions, beginning with the third and grouping the fourth along with it as a corollary, that the generation and absorption of the metria contagium is in direct proportion to the number of parturient females cohabiting in their lying-in, and that its habitat is the great lying-in hospitals. In affording proof of these positions, as in all the others I venture to propound, I shall give, in the first instance, my own experience, which I regret to repeat is but too comprehensive of this dread disease; and then the reliable experience of such other authorities as bear on the subject at issue.

The statistics of my own private practice, not of course including consultations, were, that out of about 3,500 deliveries, three fatal cases of puerperal fever or metria occurred. That is something under 1 in 1,200; whilst in the 13,157 patients delivered under my care from the years 1834 to '40 inclusive, in my mastership of the hospital, the number of fatal cases of zymotic metria were 117, or a little more than 1 in 112. Therefore, of the patients delivered under my own care, and for whom I was responsible to God and man, ten and eight-tenths, or almost eleven died of those in my charge in hospital for one in private, or in their own homes. This,

gentlemen, is an awful consideration; and, mark me, had we then possessed our present knowledge, this was all preventable, as the result of our investigation will prove.

It may be objected to this that the lying-in hospital admits the worst cases, many of them advanced in labour sent from considerable distances, exhausted and half starved. True, these matters must be taken into account as increasing the mortality; but, alas! there was a large margin to include all these cases, as the 117 deaths above reported merely included those who succumbed to metria. 101 more deaths also occurred in the 13,157, ascribable to child-birth and other diseases, a number amply sufficient to include every casualty and peculiarity to which hospital patients are obnoxious, and leaving untouched the grim array of 117 deaths by preventable metria.

Let us take the six years for which the Census Office in Dublin furnish data upon this subject, *i.e.*, from 1864 to 1868 inclusive. Although we do not obtain from these tables the number of deliveries, yet we can approximate to this pretty accurately by deducting the twin-births from the gross births, thus:—

Total births for the six years amount in the Dublin Registration District to	52,126
Deduct the usual ratio of twins, 1 in 60, as furnished by Collins's tables, the largest proportion of any country of which we have record, . . .	862
That gives deliveries	51,264
Divide into this the total number of deaths, including childbirth (197) and metria (251), . . .	448

The result is one death in 114½. This result, however, includes the deaths by puerperal fever in the hospitals, as well as generally throughout the city and suburban districts.

If we deduct only the deaths in childbirth (197) this would leave the mortality one in 265; but this would be manifestly an objectionable standard of comparison, as a certain proportion of sporadic cases of metria occur throughout the district, and at times this even assumes an epidemic character. We should be justified, however, in deducting the cases of metria occurring in hospital from the gross number of deaths, and then allowing an equivalent for the average

proportion of cases of metria occurring in the District without the hospitals, for the five years calculated, thus:—

In the two Lying-in Hospitals, from 1864 to 1868 inclusive, there were delivered . .	D. L.	5,758
	C.	2,266
Total		8,024
In the five years recorded the deliveries amounted in the city to		51,264

Outside of the hospitals the proportion by metria was 1 in 457, whilst in the hospitals it was 1 in 60. Allowing then an equivalent of deaths by metria within the hospitals for that without, one-seventh and one-half a seventh, including extra casualties and difficulties, that would leave it that 6 women died out of every $7\frac{1}{2}$, from being delivered within the walls of the hospitals, instead of in their own homes, or properly constructed huts or cottage hospitals. But if we take the two preceding years, so as to give a seven years' equivalent to my mastership already alluded to, the deaths in the hospitals from metria amount to 1 in 50 for the seven years, from 1862 to 1868 inclusive; and taking it for granted that the deaths from metria bore the above-stated proportion outside the hospitals, then the result would be that in the City of Dublin alone $7\frac{1}{2}$ women die out of every 9 from being confined in hospitals; in other words, that in all the deaths that have occurred in Dublin for the last seven years in parturition, out of every 9 deaths $7\frac{1}{2}$ women have died, who would in all human probability be at this moment alive had they been confined in their own homes, or in isolated cottage hospitals.

The Registrar-General's reports for England and Wales give, for three years, an average of:—

1 death by metria in 726; 1 by childbirth in 306 deliveries.
From both causes, 1 in 223.

In London:—

1 death by metria in 515; 1 by childbirth in 429;
From both causes 1 in 239.

In 27 cities and towns in England the mortality was, in the two years, 1862–63,

1 in metria in 781; from accidents of childbirth, 301.
From both causes, 217.

The Registrar-General of Scotland gives, for the two years, 1861–62, deaths:—

1 by metria in 400; by accidents in childbirth, 1 in 345.
From both causes, 1 in 225.

In Glasgow the deaths were, from both causes 1 in 227, of these two-fifths died of metria, and three-fifths from accidents in childbirth.

In seven of the most trading towns in Scotland the mortality was in the proportion of 1 death to 170 deliveries. The deaths from metria were about a third less than those from accidents in delivery.

But it is stated that, even admitting the mortality from puerperal fever to be greater in large lying-in hospitals, that this mortality is more than counterbalanced by the lesser number who die in them from other causes, or, as it is termed, from childbirth, and that, as the saving of human life in the aggregate is the object aimed at, the lying-in hospitals best attain it; but the plea, I regret to say, is totally fallacious, as the mortality from childbirth exclusively in the Dublin and Coombe Lying-in Hospitals combined amounted to 1 in 1 30 from 1864 to 1868, whereas those in the Metropolitan District for the same period only amounted to 1 in 260; and, as we have just seen, the average mortality from accident of childbirth in England and Wales for three years was only 1 in 306. That of 27 large towns in England was, in childbirth, in the year 1862, only 1 in 290, and in 1863 only 1 in 312.

In Scotland the deaths from childbirth, independent of metria, were only 1 in 345 births in the years 1861–62. And yet those who propose the fallacy alluded to would still assert that the recoveries are better and the mortality less from childbirth in great lying-in hospitals, if we exclude deaths by metria, than in the houses of the poor, or in cottage hospitals.

The mortality in the Waterford Cottage Hospital from childbirth, independent of metria, we should have mentioned was only 1 in 180.

Is it useless now to dwell upon the retrospect of what has occurred? The mischief is done, and may only be alluded to as a beacon to warn us against the continuance in such a fatal course. Out of the 190,783 deliveries occurring in the Lying-in Hospital since its foundation, 2,627 deaths have occurred, or 1 in 72½. Now, taking the ordinary calculation of our present death rates at 1 in 116, according to the Commissioners' return, that would leave a fearful avoidable or unnecessary loss of life in the difference between 1 in 72 and 1 in 116.

DEATH-RATES OF DUBLIN LYING-IN HOSPITAL, FROM ITS FOUNDATION TO 1868:—

Year	Number of Patients	Deaths	Death	Deliveries
	3975	45	1 in	88
1757	55	1	1 in	55
1758	454	8	1 in	50
1759	406	5	1 in	110
1760	556	4	1 in	139
1761	521	9	1 in	52
1762	533	6	1 in	88
1763	488	9	1 in	54
1764	588	12	1 in	49
1765	533	6	1 in	88
1766	681	3	1 in	227
1767	664	11	1 in	60
1768	655	16	1 in	41
1769	642	8	1 in	80
1770	670	8	1 in	80
1771	695	5	1 in	139
1772	704	4	1 in	176
1773	694	13	1 in	52
1774	681	21	1 in	32
1775	728	5	1 in	145
1776	802	7	1 in	114
1777	835	7	1 in	119
1778	927	10	1 in	92
1779	1011	8	1 in	126
1780	919	5	1 in	183
1781	1027	6	1 in	171
1782	990	6	1 in	165
1783	1167	15	1 in	77
1784	1261	11	1 in	114
1785	1292	8	1 in	161
1786	1351	8	1 in	170
1787	1347	10	1 in	134
1788	1469	23	1 in	64
1789	1435	25	1 in	57
1790	1546	12	1 in	129
1791	1602	25	1 in	64
1792	1631	10	1 in	163
1793	1757	19	1 in	92
1794	1543	20	1 in	77
1795	1503	7	1 in	214
1796	1621	10	1 in	152
1797	1712	13	1 in	131
1798	1604	8	1 in	200
1799	1537	10	1 in	153
1800	1337	18	1 in	74
1801	1725	30	1 in	57
1802	1985	26	1 in	74
1803	2028	44	1 in	46
1804	1915	16	1 in	120
1805	2220	12	1 in	185
1806	2406	23	1 in	104
1807	2511	12	1 in	209
1808	2665	13	1 in	205
1809	2889	21	1 in	137
1810	2854	29	1 in	98
1811	2561	24	1 in	106
1812	2766	43	1 in	64
1813	2484	62	1 in	40
1814	2508	25	1 in	100
1815	3075	17	1 in	180
1816	3276	18	1 in	182
1817	3473	32	1 in	108
1818	3539	56	1 in	63
1819	3197	94	1 in	33
1820	2458	70	1 in	35
1821	2849	22	1 in	129
1822	2675	12	1 in	220
1823	2584	59	1 in	44
1824	2446	20	1 in	122
1825	2746	26	1 in	105
1826	2440	81	1 in	30
1827	2550	33	1 in	77
1828	2856	43	1 in	66
1829	2141	34	1 in	63
1830	2288	12	1 in	190
1831	2176	12	1 in	181
1832	2242	12	1 in	187
1833	2138	12	1 in	178
1834	2024	34	1 in	60
1835	1902	34	1 in	56
1836	1810	36	1 in	50
1837	1833	24	1 in	76
1838	2126	45	1 in	47
1839	1951	25	1 in	78
1840	1521	26	1 in	59
1841	2025	23	1 in	88
1842	2171	21	1 in	103
1843	2188	22	1 in	99

Year	Number of Patients	Deaths	Death	Deliveries
1844	2176	14	1 in	155
1845	1411	35	1 in	40
1846	2025	17	1 in	119
1847	1703	47	1 in	36
1848	1816	35	1 in	52
1849	2063	38	1 in	54
1850	1980	15	1 in	132
1851	2070	14	1 in	148
1852	1963	11	1 in	178
1853	1906	17	1 in	118
1854	1943	37	1 in	53
1855	1060	35	1 in	30
1856	1600	25	1 in	64
1857	1509	33	1 in	46
1858	1084	30	1 in	36
1859	1389	21	1 in	66
1860	1404	26	1 in	54
1861	1135	59	1 in	19
1862	800	58	1 in	14
1863	1228	32	1 in	38
1864	1184	26	1 in	46
1865	1332	30	1 in	44
1866	1074	40	1 in	27
1867	1146	40	1 in	39
1868	1022	39	1 in	27
	190783	2627	1 in	72

But in stating the gross mortality of the Dublin Lying-in Hospital now as 1 in 72 I should lead you into an error, as you will perceive by this table of the annual mortality, given from its foundation, that for the last fifteen years it has never been less than 1 in 64, and that it has in one year risen to 1 in 14. The average of these fifteen years is about 1 in $31\frac{1}{3}$; and this is the state of things we have now to contend with, one sufficiently grave to demand our immediate attention; nor let it be said that this is an accidental epoch of exaggerated zymotic poisoning, and that if we have patience matters will be restored to their former less alarming rate of mortality. Fifteen years is a sufficient period in all conscience to test whether an epidemic is temporary or permanent in its nature, and we must not conceal from ourselves that, comparing the epochs, the death-rate increases in a fearful ratio. If you will cast your eye along the table it will give you at a glance the longest duration of these endemic hauntings to which the hospital has been liable since its foundation. Observe where there are two figures in place of three, and you will thus arrive at a rough result. From 1761 to '65 was one of these, again, from 1767 to '70, and from 1772 to '74. From this year down to 1800 we meet only an occasional unhealthy year, but it remains at two figures until 1804, and so on with only an occasional unhealthy year until 1818, the most crowded state the hospital ever was in; in that year there were 3,539 deliveries. For three years the mortality then rose to 1 in 44; in 1826 it arose again, and continued for the next four years at 1 in 50. It returned to a

state of unexampled health for the next four years of Dr. Collins's mastership, the deaths averaging 1 in 186, so much so that my lamented friend was in great hopes that by the system of ventilation, purification, and separation he had so strictly established, he had obtained the key to its annihilation from the institution. I succeeded him in the charge of the hospital, having been his assistant, and co-operating with him in carrying out all his plans. But, alas! I had too soon to learn that all his plans and precautions were unavailing to stop this fearful malady. The metria attacked the hospital in 1834, and from that year to the present hour, that is, a period of thirty-five years, only on seven occasions, namely, 1842, '44, '46, '50, '51, '52, and '53, have the proportions amounted to three figures. In my seven years' mastership, one year of which I never was without metria, notwithstanding every precaution (with experience gained in working Dr. Collins's system with himself) my gross mortality amounted to rather less than 1 in 61. This mortality was fearful enough, but when we state that out of the 18,906 patients delivered in the hospital for the last fifteen years 603, or 1 in 31⅓ have died, and that under the ablest superintendence and the most assiduous care, then, I affirm, there is clear convincing evidence that there is a something so defective and objectionable in the system of the hospital itself, that not a moment should be lost in correcting it in the manner that experience, science, and observation best dictate.

But let it not be supposed that we look upon the result of Lying-in Hospital practice in this city as the most fatal to be found; on the contrary, it is one of the least fatal of the great Lying-in Hospitals throughout Europe, showing that not to the want of skill and talent is due the fearful mortality upon which we dwell, but to an inherent defect of the gravest character in the system or construction of these institutions, and one that baffles human ingenuity to correct as long as they continue to be constructed upon their present vicious and faulty plan.

We shall, in proof of this position, now give a few statistics upon the Lying-in Hospitals generally, and request your close attention to the figures and the rateable mortality in reference to the size of the hospital and number of patients cohabiting:—

Large Hospitals.

		Mortality.		Deliveries.
Liverpool, . . .	156 patients	1	in	99
London Hospitals, all,	2,000 „	1	in	77½

		Mortality.		Deliveries.
Coombe,	404 annually	1	in	72.25
D'Barnes' several Continental Hospitals,	14,253	1	in	$56\frac{3}{4}$
Glasgow,	352	1	in	$54\frac{1}{2}$
Dublin,	1,334 annually averages	1	in	$31\frac{1}{5}$
St. Petersburg Midwives' Institution,	1,714 annually	1	in	$26\frac{2}{7}$
St. Petersburg Hospitals,	1,715 annually	1	in	22
Vienna, 1838,	4,453 annually	1	in	25
Paris Gen. Hospitals, 11, 1862	433 or 4,764 in 11 Gen. Hospitals,	1	in	$18\frac{1}{2}$
Paris, 1862,	2,204	1	in	$18\frac{1}{2}$
Cottage Hospitals.				
New Ross,	30 annually, total 924	1	in	185
Waterford, 23 years,	115 annually	1	in	295
Limerick,	367	1	in	367

We shall now give the statistics of the maternities which supply home attendance in midwifery cases, as furnished by Mr. Simon, and with which you are rendered familiar by Dr. Phelan's elaborate and convincing pamphlet, to which I beg to call your strict attention.

Royal Maternity, London,	18,751 in	5 years,	1 died in	334
St. Petersburgh, reported by D. Hugenbeyte,	207,582 in	15 years,	„	143
Glasgow Lying-in Hospital, patients attended from	729 in	2 years,	„	73
Coombe Lying-in Hospital, patients attended from	4,473		„	223

This statistical part of this report cannot be better summed up than in Dr. Leon Le Fort's calculations and words:—

"Of 888,312 women confined in maternities or hospitals, 30,594 died; and of 934,781 deliveries effected in the towns, 4,405 were followed by death. The mortality was, in the first case, one woman out of 29 confined; in the second it was only one out of 212 cases, but Mr. Leon Le Fort's three essential parts or propositions ought to be written in gold—they are as follows:—

"The women who are confined in hospitals and maternities, not only die there in much greater numbers, but die in quite unusual proportions compared with those who are confined in their own dwellings.

"The cause of this frightful mortality must be attributed to puerperal fever, and it is by contagion that this destructive scourge exerts its ravages.

"It is absolutely necessary to take serious hygienic measures, and if the malady cannot be prevented from breaking out, it is however possible to impose barriers to it, and to say 'Thou shall go no further.'"

The capricious occurrence of metria is proverbial, in so much so that no hospital physician can calculate for any length of time upon a healthy state of his hospital continuing. This is perfectly true; yet there are precursors that cause the physician of experience much anxiety, and lead him to dread an outbreak. The first of these is the occurrence of other zymotic disease, either epidemically in the city or more particularly in his own institution. Typhus fever, scarlatina, and erysipelas, are those diseases that especially attract his notice, and the history of the Lying-in Hospital, as well in my on time as subsequently, has corroborated the fact that the appearance of these diseases, but particularly of scarlatina, is a fatal prognostic, and should put us at once on our guard. When such cases come into hospital they should be immediately removed to contagious hospitals, if this be possible, and if not separated and isolated, allowing no intercourse whatever with the atmosphere or occupants of the other parts of the building. The number of patients should be limited in admission, and if the disease shows itself the hospital closed altogether for a time.

Another precursor to the outburst of metria is the occurrence of bad recoveries after labour, particularly if operation, or manual interference had been necessary. This state may go on for some time, and that without a death occurring. When the hospital physician meets this threatening aspect of affairs let him adopt the same precautions just insisted upon in zymotic disease occurring; but above all, that of lowering the number of admissions or shutting up the institution, as, most assuredly if he do not, the outburst will speedily be upon him.

Prop. 6.—The proposition that metria is contagious is one that I am just as well satisfied of as that typhus or erysipelas is contagious, whilst it is not so markedly so as scarlatina, measles, or small-pox, I freely admit. The occurrence of the sporadic cases of this disease, leaving no possible trace by which they can have spread by contagion from another parturient female has, no doubt, given rise to, and confirmed the idea of, its non-contagious nature;

but exactly the same thing may be said of typhus fever and erysipelas. They occur no doubt sporadically, but will any one deny their spreading by contagion?

I doubt not, however, that many of those cases which we called sporadic cases of puerperal fever were cases of traceable contagion in which the contagium was carried from another case similarly effected by the medical attendant or nurse-tender.

I recollect being very much struck with the evidence afforded of this fact in the case of a most assidious and indefatigable physician who was sent over by his Government from the North of Europe to study under me at the Lying-in Hospital. He was with me during one of the earlier outbursts of puerperal fever, when it became necessary to partially close the hospital and attend patients at their own homes. This gentleman was not remarkably attentive in exercising that virtue which is said to be only second to Godliness. He never appeared to change linen or woollen habilaments, and absolutely lived in a shaggy pilot coat by night and by day. He was so unceasing in his duties that he attended two patients for every other pupil's one; but the unhappy part of it was that I traced him through his rounds of duty like the pale horse in the Apocalypse, and the fatality attending his steps was such that I was obliged to request him to desist from visiting patients at their homes when the proportion of cases sensibly diminished.

But the onus of proving this carrying of puerperal fever about does not rest with my northern friend. The same has often occurred with practitioners extensively engaged in midwifery practice. We have known of such who were obliged (for their own peace of mind and from conscientious feelings) to retire for a time from midwifery practice, or absent themselves from the neighbourhood. But the remarkable feature in some of these cases was, that whilst the disease haunted such practitioners as their shadow, the practice of most of the other practitioners in the same district was unattended by it. Whilst it has been my duty to see a large proportion of the cases attacked with metria in consultation occurring in this city, the proportion of them occurring to myself when I was engaged in midwifery practice, as already stated, only amounted to about one in 1,200; and of this I have not the slightest doubt, that this small proportion was due to the fact of my early conviction of the disease being contagious, and my having acted always upon this conviction. In fact, I never went to a parturient patient after visiting a case of metria or other

infectious disease without taking all the precautions I should have done in a case of scarlatina or small-pox, such as ablution and change of dress.

I admit it was troublesome, and often put me to serious inconvenience. Nevertheless I ascribe to this freedom from much painful afterthought; and it is, in my conviction, a practice that no matter what a physician's opinion may be on the subject of contagion, he is not only not justified in omitting but highly culpable in neglecting.

It is all very well for a physician to form an opinion upon an abstract proposition of this or any other kind, and maintain it sturdily too; but for him to test it by exposing his patient to what a large proportion of his professional brethren believe to be almost certain death, is another and a much graver question, and one which, in my mind, don't admit of one moment's argument.

But if our views of a common poison be confirmed, many of these cases that we have hitherto esteemed sporadic may have been due to contagion, as hitherto little precautions have been taken by medical practitioners in separating zymotic diseases from parturient females, or in going from one to the other themselves, and possibly thus carrying the disease along with them.

Again, the practice of having lying-in patients in general hospitals, as they have in the Hôtel Dieu and in other hospitals in Paris—a practice productive of enormous mortality and most reprehensible in every way—goes some length to explain upon our views of the disease, not only the true nature of what has been termed sporadic metria to be contagious, but also the enormous fatality where this practice is adopted.

It having been fairly established by what has preceded that metria stands in relation of effect to cause with other zymotic diseases and crowded hospitals; how could a more mischievous and destructive plan be adopted than putting parturient females into general, and more particularly surgical hospitals, where the special traumatic element is developed?

In asserting the non-contagious nature of metria, the last argument, that based on its sporadic nature must yield, if the principle of poisoning by self-contamination be admitted as here, the contagium is just in operation the same as if the patient to be contaminated were placed for the purpose in the same ward with one stricken. And this is not dwelt upon merely as a nice point of the principles of medicine. It is purely practical in its bearing—a

point which the admitting can produce no evil, but good—as at once we are led to inquire why this self-poisoning should occur in some cases and not in others.

In my own cases of sporadic puerperal fever already alluded to, the condition of the patients' chambers assimilated to that of the lying-in hospitals. The atmosphere was sensibly loaded; cleanliness and ventilation were comparatively less attended to, and the atmosphere was charged with exuviæ. Now this fact is not dwelt upon as implying that a want of cleanliness or neglect of the necessary precautions, such as removal of the excretions, foul linen, or attention to ventilation, could be chargeable to the lying-in hospital; on the contrary, I know that the reverse was the case, as well in my own mastership as in all those subsequent. But with every precaution that can be used in these respects, every hospital physician and surgeon knows that a loaded state of the atmosphere exist necessarily in a ward more or less crowded with patients. Nay, that to the ordinary visitor effluvia are quite perceptible, and even effluvia varying in their character are detectable by the visitor gifted as I am with an unpleasantly acute sense of smell. In fact, I never could mistake the special odour of the lying-in hospital labour wards, or fail to distinguish it from that of a surgical hospital ward.

We all recollect when cholera was pronounced non-contagious, and when those who were hardy enough to resist the popular current upon this subject were, if not carried away and overwhelmed by the flood, at least half-stifled and choked by its brawling turbulence. Reason has at length had her sway. The simple and conclusive evidence of its growth in gatherings, its zymotic origin, and its spread along the lines of human traffic, have at length been listened to; and the hardy supporters of contagion who have, like myself, survived the hubbub and turmoil, remain with their belief in the doctrine unshaken, nay confirmed by the buffeting it has undergone.

As to metria, I should place it in its degree of contagion, in the same category with erysipelous and typhus fever, and rather more so than cholera.

The seventh and eighth proposition we shall, for brevity sake, discuss together.

Its endemic nature, and its prevalence in a given hospital, or the wards of the same hospital, are self-evident facts from what has preceded; and in dealing with the subject of endemic and contagious

disease, I imagine much confusion has arisen from the attempt to create "a distinction without a difference." It cannot be denied that in endemic and epidemic disease, a physical entity or influence is present in the atmosphere, whether of the room, the house, the street, or the district, of a peculiar character, which produces a certain effect or train of symptoms, recognizable by us as ascribable to this endemic or epidemic influence. What this is has, hitherto, escaped our detection. Just as is the case in whooping-cough, measles, cholera, typhus fever, so it is in ague, metria, and influenza; accepting, as we may, the three latter as the best types of endemic and epidemic diseases. The fact of its being necessary to breathe the same atmosphere as that breathed by the whooping-cough sufferer, and to inhale the exhalations emanating on swampy localities, or to reside in the district visited by an influenza, does not alter the necessity of imbibing into the system, either by respiration or contact, a physical principle which acts as a poison, and, of course, this cannot be imbibed unless it exist, consequently it reduces the matter at the last to a poison or influence operating necessarily by contact; and thus all these modifications must come to be considered as contagious, and due to contagion.

My convictions upon the view of the endemic disease have long been confirmed by what I observed in the attacks of puerperal fever haunting certain wards in the lying-in hospital. This was especially the case with what most of my hearers will know as No. 11, with No. 10, and with No. 8, but particularly with No. 11. No. 11 consists of three small rooms in the old brick building, two of about eighteen by sixteen, and one about twelve by fifteen, communicating with each other, and containing about 3,400 cubic feet of atmospheric air; in these there were nine beds. Now, this ward was so subject to the disease, patients in the epidemics having been attacked in a proportion so much larger than the other wards, that I passed it over in its rota of receiving patients, and kept it empty—paying at the same time every attention to painting the wood-work, white-washing the walls and ceiling, scouring, with chlorate of lime solutions the floors, and washing, with the utmost assiduity, the bed-clothes, the nurses' wearing apparel; and obliging the nurses, wardmaids, and pupils to attend to ablution—a difficult duty I confess. Yet, on opening the ward, again and again the disease showed itself, until at last, on one occasion, I shut these wards up for six months before allowing new patients to enter them.

The same fact is observable in the lurking poison of scarlatina—

that most tenacious of all poisons to its habitat. I recollect a house in Mount-street, in this city, that was in the habit of being let furnished, and on three occasions, the last at an interval of twelve months from the preceding occasion, I had patients up from the country for their confinement, and members of their families, attacked in it with scarlatina. Nor can I easily describe my vexation on my being summoned to this house when it was too late to correct the mischief.

Now before leaving this subject it is right to mention that although I have not myself met fatal puerperal fever occurring epidemically in my own private practice, many other physicians of large experience have; and I have seen, in consultation, a larger proportion of such cases at a time when it was notorious that bad recoveries occurred in this city and neighbourhoood than at others, ascribed to the epidemic prevalence of the disease.

Does not this, it may be said, go a great length to combat the contagious theory, and to disprove the greater hospital mortality—no such thing; it rather confirms both views if properly understood. Can any person of observation doubt for one moment that influenza is epidemic, endemic, and contagious. Witness its almost universal prevalence at times in whole districts. Again, its prevalence amongst all the members of a household in isolated cases; and lastly, the frequency with which a sociable friend carries it home from a visit of comfort to his suffering neighbour, or what is more conclusive and less pardonable, how frequently the benevolent man walks in to pay a friendly call to his neighbour when he ought to be nursing it in his chamber—and imparts a month's torment to him in communicating rapidly the news of the day. Can any person doubt that if it was our habit to live in common homes influenza would not be *universal* instead of prevalent as it is at present? Or can it be doubted that scarlatina even when epidemic does not become a scourge when it gains admission to Eaton, Harrow, or Rugby?

In fact, the conclusion practically to be drawn from the epidemic tendency is that the fact of this predisposition existing renders it the more imperative to avoid congregating those liable to zymotic disease and puerperal fever in particular, as it adds immensely to the likelihood of its occurrence and spread where the two influences co-exist.

We shall not recapitulate what has been stated in the earlier part of this paper about the comparative security to life of those

delivered in their own homes, however humble they may be, as compared to those delivered in large hospitals. This fact is now so firmly established that it were only an insult to my hearers to dwell upon it.

Let us now see what the results are under a system of proper management in the housing of poor women in their trying period. Mark me, gentlemen, I say proper management in housing—in nothing else do I presume to call in question the management.

The housing that we venture to bring under your notice in contrast with that of the great hospitals, which I have so unhesitatingly condemned, is that adopted so successfully in the smaller towns in Ireland; and we shall rest satisfied with giving you simply the statistics of three of them which have been carefully kept.

Their success depends upon only having one or two patients in the hospital wards at a time, as their treatment in all other respects appears to be the same as that in our larger hospitals.

In New Ross, of which there is a published report for 30 years, to 1839, the total admissions were 924, or over 30 in each year, and the deaths were only 5, or 1 in 185.

In Waterford, of which we have the report published by Dr. Elliott, to whose exertions to draw attention to this matter we owe so much. His report reaches from 1838 to 1868, 30 years, in which period 3,534 deliveries occurred. The gross mortality in it has been for this period 1 in 288, and the mortality from puerperal fever only 1 in 328.

In the Limerick Lying-in Hospital, however, the success was even more marked of the small hospital system, as it only gives 1 death in 367.

Dr. Elliott, who I am proud to claim as an old pupil of mine, puts the question under discussion so simply and so conclusively, that I must be permitted to quote the paragraphs referring to it from his report of 1868.

He describes his cottage hospital as "a small house rented for the purpose, in an elevated and airy part of the town.

"Of this house, only two rooms were available for the occupation of the patients. One was a very small room, in which were two narrow couches or beds, on which the patients were delivered; and the second, a larger room, in which were eight beds. Into this last-mentioned apartment the patients were removed at the end of some hours after delivery, and they continued to occupy it during

their stay in the hospital. This larger ward was lighted by three windows with a louvred pane in the upper sash of each. The door was removed from its hinges, so that the entrance was rendered a mere door-way, necessarily open at all times; the bedsteads were plain iron couches, very roomy, but devoid of tester, curtains, or valance of any kind; the beds were of straw, inclosed in a sack or ticking, and changed for each patient.

"Into this hospital 753 women were received and delivered between March, 1838, and October, 1844, a period of six years and six or seven months. Of these, six died, three of the deaths being the result of puerperal fever in one or other of its forms, thus giving a total mortality of 1 in 125½, being a per centage of 0·79 or 4-5ths nearly; and a mortality from puerperal fever of half the amount, viz., 1 in 251, or 0·39 per cent.

"In October, 1844, the hospital was removed to the house which has been in continued occupation to the present time. This house is less favourably circumstanced as to its surroundings than was the former. It is situated in a narrow street, about 25 feet wide, in a poor and rather densely inhabited neighbourhood, and the ground on which it stands is rather low.

"It consists of six rooms. On the ground floor is a board-room to the front, and behind it a kitchen; on the first floor a small apartment to the rere, in which are two delivering couches; and to the front, an apartment or ward in which are four beds for the reception of patients after delivery, and during convalescence.

"On the upper or second floor are also two rooms; one to the rere occupied by the resident midwife, and another to the front, in which are four beds for the reception of patients.

"Each of the wards, in which are four beds, is lighted by two windows, with a louvred pane in the upper sash of each. The door of each is removed from the hinges as in the former hospital; and the bedsteads and bedding as before. Behind this house or hospital, if it be worthy of that appellation, is a small yard, in which are a wash-house, ash-pit, privy, and house for the storage of straw, but the drainage and sewerage are by no means perfect. These details, which may appear to some tedious or trifling, are given, because a knowledge of them is necessary for a due appreciation of the results.

"Into this hospital, from October, 1844, to this day, that is, during a period of twenty-three years, there have been received and delivered 2,656 women. Of these nine have died, two of that

number of puerperal fever in the form of puerperal hysteritis, being a total mortality of 1 in 295$\frac{1}{9}$; or a per centage of deaths of 0·33, and a mortality from puerperal fever of 1 in 1,328, being a very small fraction indeed.

"It will have been seen that in the first hospital, where two apartments only were devoted to the immediate use of the patients, eight beds were grouped together in a single ward; and that in the present hospital three apartments are available for their use, so that the same number of beds is divided between two wards; and it will be noticed, as a significant fact, that whereas the mortality from puerperal fever was, in the first hospital, 1 in 251, during a period of six years and six months, the mortality from the same cause has been, in the present one, only 1 in 1,328, during a period of twenty-three years.

"In this, as in larger hospitals, and especially in lying-in hospitals, the number of patients together under treatment has varied greatly; there have been occasions when all the beds were occupied at the same time; and once or twice it has been found necessary to receive even more than the proper number; generally there have been only one, two, or three in hospital at the same time, and not unfrequently the hospital has been for some days, or a week, or even longer, completely empty."

What practical deduction do we arrive at from what has preceded?

That by the system of large hospitals certain death results to a much greater number of patients than when admitted to small, or when confined in their own homes.

Whatever question may arise as to the accuracy of the statistics in patients delivered at their homes, none occurs in the well-authenticated reports of the small hospitals, that does not exist equally in the case of the large. We shall, therefore, limit our comparison to the great and small hospitals. Let us then take first the three small hospitals:—

Mortality in	New Ross	is 1 in	185
,,	Waterford	,,	295
,,	Limerick	,,	367
			840

The mean of these three is 1 death in 282$\frac{2}{3}$.

This, then, is our standard of the proportion of deaths which

occur where women in labour are treated in small hospitals in place of large. We are justified in concluding that the general treatment is the same in both, the only difference being the congregating large numbers of parturients into the same building in one case and not in the other. Let us further bear in mind that the increased mortality bears nearly a direct proportion to the increased numbers inhabiting each building. What then are the comparative results with the small hospitals as our standard? We shall first take the larger hospitals in detail.

That in the Liverpool Hospitals, 2 out of 3 die, who should not; or in other words, the deaths by proper management should be reduced to *one-third* of their number.

In the London Hospitals, 3 out of 4 die, who should not; or the deaths should be reduced to one-fourth of their number.

In the Coombe[a] Hospital, 3 out of 4 die (on their present calculation) that should not; which calculation extends over a period of the last 7 years, and the deaths ought to be reduced to one-fourth of their present numbers.

In the Glasgow Hospital, 4 out of 5 die, who should not; or the deaths ought to be reduced to one-fifth of their number.

In the Dublin Lying-in Hospital, 8 out of 9 die, who should not; or the deaths ought to be reduced to one-ninth of their present numbers.

In the Midwives' Institution, St. Petersburgh, 10 out of 11 die, who should not; or the deaths ought to be reduced to one-eleventh of their present numbers.

In the Hospitals generally in St. Petersburgh 12 out of 13 die, who should not; and the deaths ought to be reduced to one-thirteenth of their present numbers.

In Vienna Hospital, 10 out of 11 died who should not; or the deaths ought to be reduced to one-eleventh of their number.

In Paris General Hospitals, 17 out of every 18 died who should not; or the deaths ought to be reduced to one-eighteenth of their number.

In the Paris Lying-in Hospital, or Maternity, 20 out of every 21 died who should not, and the deaths ought to be reduced to less than one twenty-first part of their number.

[a] As some difficulty occurred in tracing the fatal cases sent out from the Coombe to the other hospitals, I cannot pledge myself that the death-rate, if taken, for the Coombe Hospital for the last fifteen years, as in the case of the Dublin Lying-in Hospital, might not prove different, and perhaps approach more nearly to the figures of that institution.

Or if we take the mean of the death-rate of the 11 great hospitals as denominated above as one death in 44, and suppose the magic of our eloquence to reach and influence their managers in establishing small hospitals, or properly-constructed huts, instead of their present large hospitals, the saving to human life by this simple alteration would prove immense.

Be it recollected, these poor women flock to these hospitals under the impression that they are gaining a safe asylum in their hour of trial and distress; little do they imagine that they are, in their ignorance, taking a step that adds to their risks of death, in a ratio, at the very lowest calculation, of three to one, and at the highest at 20 to one, against their lives. Shall we then continue to keep these asylums open upon their present faulty principle, when by merely remodelling the great obstetric institutions of this city ample and safe accommodation can be provided for them?

But it will be asked would you absolutely shut up the hospital, and destroy our world-renowned school of midwifery in this city? By no means; I would establish the midwifery school upon a sound basis. I would take the lead, as Dublin has ever done, in this department of medicine, and correct the crying abuses that exist; abuses that may have been excusable when ignorant of them, but which are unpardonable alike in the eyes of God and man when dragged into the light of day. There is no difficulty whatever in the case of the Lying-in Hospital of Dublin in meeting the intentions of the founder by such an alteration of the present system as our increased knowledge of its vices suggests. The correction of these abuses will benefit the medical school of Dublin, and the obstetrical branch in particular.

The intentions of the founder, Moss, would be best carried out by accommodating his great charity to those changes that progress in his art dictates, and which his great mind would have been the first to grasp and the boldest to execute were he now amongst us. Picturesque huts, in the Swiss or Italian style, sufficiently elevated above the ground, could be easily constructed to accommodate as many patients as are at present admitted, and could be built in the high ground in the Rotunda Gardens or elsewhere, or the pavilion system, lately introduced in some Continental and American hospitals, might be adopted.

The large hospital, at present such an ornament to our city, and such a benefit to humanity, through its diseases of female wards, can be appropriated exclusively to diseases of females, the brick

building appropriated as a residence for midwives sent up for instruction from the country, and thus supply the greatest desiderata to our school.

Patients can be more generally attended at their own homes, and appliances, medicines, and even food supplied. In fact, all that is here insisted upon except the isolated huts is, and has been, for years in operation—ever since my establishment of the female disease ward; and all we want is to extend these and add the huts. I long foresaw the necessity of these changes, and have been gradually pressing them on the attention of the governors.

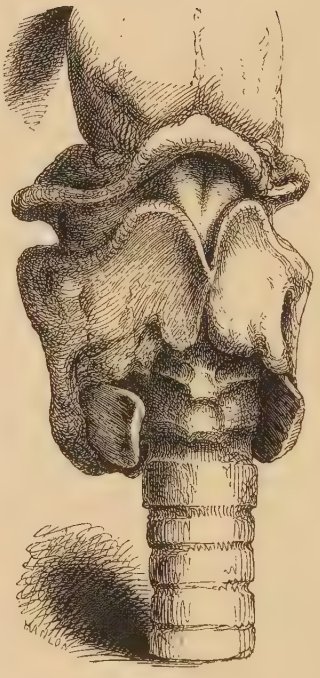
It becomes a trying effort to look on at avoidable loss of human life, when the responsibility of preventing this rests upon our own shoulders. In this painful position have I been for the last 30 years. As a governor and ex-master of the Lying-in Hospital my impressions have been confirmed as to the necessity of the change I now advocate. I feel that, with my knowledge and convictions, silence on this subject would be cruel, heartless, not to say criminal. This feeling of dissatisfaction increases with age and experience; so do our apathy and listlessness. Life runs on apace, but misery and redress of wrong lag. These convictions must plead my excuse for so tardily calling public attention through the influence of our common profession to this great grievance. I have now done what I conceive to be my imperative duty in this matter, and confidently leave the issue in the hands of a profession who have ever made the public good its first object.

ART. XVI.—*On Traumatic Fractures of the Larynx.* By WILLIAM STOKES, Jun., Surgeon to the Richmond Surgical Hospital; Lecturer on Surgery, Carmichael School of Medicine; Fellow of the Royal Medico-Chirurgical Society of London, &c.

As fractures of the cartilages of the larynx are a class of injuries which so rarely come under the observation of the surgeon, the particulars of the following case of comminuted fracture of the cricoid, presenting features which, I may say, render the case almost unique in the history of these injuries, must doubtless be held to be of considerable surgical value.

On the 22nd of last September, I was summoned to the Richmond Hospital to perform tracheotomy for a female who had just been admitted, suffering from extreme dyspnea, which had come on

rapidly after receiving a kick in the throat from her husband. The account that was obtained from the patient's friends was, that she had a dispute with her husband relative to some money which she had about her, and of which the husband wished to get possession. All persuasion to obtain it from her failing, he had recourse t violence, and threw her down on the floor. On attempting to rise he kicked her on the throat, which had the effect of again prostrating her. I presume that some symptom she had then alarmed him, for he offered her no further violence, and she shortly after rose and stated that she would charge him for this brutal assault. While in the street, looking for a policeman, the dyspnea commenced. It rapidly increased in intensity, and she was immediately brought to the Richmond Hospital. On her admission she was almost inarticulate; there was a cold sweat on her forehead; her pulse slow and weak; her face much flushed, and her lips livid. Her respiration was laboured and difficult, but not so much as to make those about her think that the case was about to terminate so suddenly as it did. I was immediately summoned, and lost no time in getting to the hospital; but on my arrival, I learned that the patient had just expired. I found considerable flattening, and abnormal breadth of the throat. There was no apparent ecchymosis, but much effusion and infiltration among the soft structures were distinctly felt. From these appearances, as well as from the abnormal mobility of her laryngeal cartilages, and also an obscure crepitation, the diagnosis of fracture, with displacement of one or more of the cartilages, of the larynx, was made—a diagnosis which the *post mortem* examination verified. All the soft tissues about the larynx were found profusely infiltrated with blood, although no laceration of a large vessel could be determined; it was more copious and extended further back on the right side than on the left. On taking out the larynx I found that there was a double fracture of the cricoid cartilage. These two fractures were symmetrical, each being situated at about half a quarter of an inch from the middle line. There was displacement backwards and slightly inwards of the left fragment, separation of its articulation with the inferior cornu of the thyroid, and considerable laceration of the crico-thyroid muscle on that side. The displacement of the fractured portion of the cricoid was not observed on the right side. Here, posterior and external to the thyroid and cricoid cartilages, and by the side of the epiglottis, there was a considerable effusion of blood, of itself contributing in no small degree, by its pressure from without, to the closure of the



larynx. The obstruction, however, was chiefly caused by the effusion of blood beneath the mucous membrane of the larynx, especially under the aryteno-epiglottidean folds, and in the ventricles of the larynx, which produced almost complete occlusion of the glottis, and consequent apnea. There was no laceration of the mucous membrane, and consequently no emphysema.

The occlusion, therefore, was caused by the existence of the four following conditions:—

1. Effusion of blood external to the larynx.
2. Effusion under the lining membrane causing closure of the glottis.
3. Displacement inwards of left fragment of cricoid.
4. Displacement of arytenoid on right side.

The accompanying woodcut is a faithful representation of the appearance the cricoid cartilage presented.

In this case, therefore, we had an injury of the larynx which, as far as I can determine, is unique in its character, viz.: a multiple or comminuted fracture of the cricoid, and also a double displacement, one of a fragment of the cricoid, and the other of the right arytenoid.

It is very remarkable how few recorded cases of traumatic laryngeal fractures are to be found in surgical literature. M. Cavasse, in whose valuable memoir on laryngeal fractures will be found an exhaustive account of the different characteristic signs of these injuries, gives—excluding the cases of fractures of the larynx produced by hanging, and those of the os hyoides,—the particulars of only nine cases. In one of them the fracture involved the cricoid, thyroid, and arytenoid on one side; the two others the thyroid and cricoid were fractured and in the remaining six the thyroid alone. In Sir Duncan Gibb's most valuable memoir on *Diseases of the Throat and Windpipe*, will be found the particulars of three most interesting cases of fracture of the thyroid cartilage, two of which occurred in his own practice. He also gives the history of a case of fracture of the cricoid, accompanied by the rare complication of emphysema, which Mr. Prescott Hewett has recorded in the first volume of the *Transactions of the Pathological Society of London*. The following is the case as given by Sir Duncan Gibb in the work I have alluded to above:—"A man aged twenty-seven, fell from a scaffold fifty feet high, and although his fall was broken, he sustained various injuries for which he was admitted into St. George's Hospital, under Mr. Cutler's care. Urgent dyspnea was present, with emphysematous crackling about the root of the neck. The

latter spread rapidly in the cellular tissue of the upper part of the body, the tongue was swollen and protruded between the teeth, the emphysema spread to the lower extremities, and he died three days after the accident, never having rallied from the head symptoms. The lungs and ribs were sound, but on examining the trachea and larynx the right side of the cricoid cartilage was found to be broken in two places on its anterior surface, a portion of the cartilage two lines in length being thus separated from the other parts. The angles of this fragment were so sharp, that the superior had penetrated through the mucous membrane, producing a jagged opening, the size of a pea, which communicated freely with the cellular tissue of the neck, and gave rise to emphysema. Ecchymosed spots surrounded the vocal cords, and the brain was found extensively lacerated."

M. Cavasse has classified the signs of these injuries into the functional and physical. Among the former continuous dyspnea constituted, in seven out of the nine cases recorded by him, a characteristic symptom; in my case it was extreme, so that in eight out of ten cases it was present. In the two cases in which it was not present, which were recorded respectively by MM. Piedagnol and Marjolin, there was no dyspnea; and it is remarkable that in these two cases, the force which produced the lesion was applied on the side of the larynx, and not immediately in front of it. It is hard to say if this circumstance was accidental or not, but it was one which might possibly be of some importance in a medico-legal point of view. The causes of the dyspnea are—first, submucous effusion of blood; secondly, effusion of blood external to the larynx; thirdly, displacement of the cartilages; fourthly, deformity of the glottis; and lastly, abnormal mobility of the point of attachment of the vocal cords. These are mentioned by M. Cavasse, with the exception of the second, the effusion external to the larynx, which was so well marked in the case which fell under my observation. It was so extensive as to partially displace the larynx to one side.

The second important sign is facial lividity as indicating an impeded respiration.

Another frequent, but not invariable, symptom is alteration in the voice. Sometimes there is complete aphonia, as in the case which came under my observation. In other cases the voice was hardly affected. There is, therefore, great difference in the intensity of this sign, which appears to be due to the varying etiological

conditions producing these lesions, and also to the mechanism of them. From the recorded cases it seems that the fractures produced by lateral pressure, are less liable to be accompanied by aphonia than those produced by force applied directly in front. This is, in truth, what we would expect, as injury to the vocal cords or their points of attachment would not be as likely to follow after the direct application of lateral force, as, in this case, the resistance is so much less than when it is applied directly in front.

The remaining functional sign of these injuries is pain, which also is not invariable, but in some cases is extreme, and may be either spontaneous or be induced by manipulation, by attempts to speak, or by the act of swallowing.

The physical signs of these injuries are—

1. Alteration in form of the neck.
2. Increase of volume of the neck.
3. Abnormal mobility of the cartilages.
4. Ecchymosis.
5. Crepitation.
6. Emphysema (rare).

The principal alteration in the form of the neck is flattening anteriorly, produced by the obliteration of the pomum Adami, in cases—namely, when the force is applied from before backwards. M. Cavasse observes that as yet no one has noticed the change in the form of the neck when the fracture is produced by lateral pressure. The flattening in cases of fracture produced by antero-posterior pressure appears to him to be more marked when the cartilages are ossified. When they are not, the elasticity of the cartilages ought to restore the larynx to its normal form. There are two ways of establishing abnormal mobility—first, by making lateral pressure there is little resistance found in approaching the cartilages of the larynx; and secondly, in passing the fingers down the mesial line a vertical depression is easily perceived. This latter manœuvre indicates much better than the first, the situation and direction of the fracture.

There are in these cases two situations for the ecchymosis. One is subcutaneous, and acts chiefly in producing alteration in form and increase in volume of the neck; the other is deep in the immediate vicinity of the lesion, and may, if very extensive, assist in no small degree in producing dyspnea by pressure on the wind-pipe. These two hemorrhagic effusions never communicate, being prevented from doing so by the cervical layers of fascia.

Another physical sign of great moment is crepitation, which, however, is more often absent than present. Its absence may be due to many causes, among which may be mentioned the fracture being incomplete, the cartilages not being ossified, and also it may be impossible to produce it in consequence of the extensive hemorrhagic effusion immediately external to the fracture. This must necessarily produce considerable difficulty in moving separately the fractured portions of the cartilage or cartilages.

The last physical sign I would mention is emphysema, which is extremely rare. It did not occur in my case, and in only one of those recorded by M. Cavasse. It was a case which was under the care of M. Laugier, one of the surgeons of the Hôtel Dieu. The fracture occurred from a fall down a flight of stairs. The patient was a man aged forty-eight, and was admitted into the Hôtel Dieu on November 20, 1858. Immediately after the accident (9 a.m.) there was considerable oppression of breathing, and at 2·30 a.m. the following morning he walked to hospital. His gait was slow; head thrown slightly backwards; face anxious; mouth open; face pale; lips cyanotic; body covered with a cold sweat; pulse frequent and feeble; respiration stertorous and blowing; considerable aphonia. The oppression increased on the slightest effort to speak. He would not remain in hospital, but six hours after returned with a marked aggravation of all his previous symptoms, and, in addition, the existence of a deep-seated emphysema was easily determined. Shortly after this the patient died suddenly. The *post mortem* examination revealed a vertical fracture of an ossified thyroid cartilage; extensive hemorrhagic effusion; laceration of crico-thyroid membrane; vertical and dentated fracture on right side of cricoid cartilage; fracture of right superior cornu of thyroid cartilage; laceration of ligaments of right crico-thyroid articulation; fracture of great cornu on right side of os hyoides; luxation of arytenoid, and laceration of mucous membrane; ecchymotic effusion in sub-mucous cellular tissue.

The only other case that I will allude to, and that very briefly, is the case which was under M. Maisonneuve's care in the Hôpital de la Pitié, May 10th, 1857. The patient was a young man, aged twenty-four, by occupation a mason, who was thrown down by a dairyman's cart, one of the wheels of which crushed the larynx in passing over the anterior portion of the neck. On his admission he was in a state of semi-apnea, with all the other usual signs and symptoms of an impeded respiration. Apnea was warded off by a venesection, but its good effects did not last; a second was performed, and a

third the day after. On the fifth day the dyspnea became so urgent that tracheotomy was performed. The operation, owing to the crushed and flattened condition of the larynx, and the neighbouring soft parts being swollen and contused, was accomplished with extreme difficulty. The case did very well; but the patient, owing to contraction of the larynx, which became permanent, was obliged ever afterwards to wear a tracheotomy tube.

The successful result of tracheotomy, which was obtained in this remarkable case of M. Maisonneuve, makes it a source of unceasing regret to me that I did not arrive at the hospital sufficiently early to perform the operation, and in all probability save the life of the patient whose case is the theme of this communication.

ART. XVII.—*Cases of Hemorrhage from the Ears, Eyes, &c.* By ROBERT LAW, M.D., King's Professor of the Institutes of Medicine; Physician to Sir P. Dun's Hospital; and Consulting Physician to the Adelaide Hospital.

THERE are few subjects connected with pathology more interesting, more important, and we would add more curious than the vicarious or supplementary hemorrhages that occur with females, and through which nature seeks to relieve the system in case of suppressed or insufficient menstruation. The points of especial interest connected with the subject are the situation of these hemorrhages, their extent, and the frequency with which the most important and most delicate organs are their seat, without eventually sustaining any permanent injury.

While it often happens that a physiological relation exists between the seat of the hemorrhage and the organ from which the suppressed or diminished discharge should come, this is not always the case. While there are few if any organs of the body that have not been the vicarious outlet of this discharge, it appears to exhibit an especial predilection for a weak or suffering organ. We often tremble for a delicate female the subject of extensive hemoptysis, or rather pulmonary hemorrhage occurring at the period that may be said to be the crisis of the constitution, and especially should the subject inherit a phthisical tendency. Although there be substantial grounds for alarm and anxiety for the future of such a case, yet we have often seen such escape unhurt, and attain to perfect health.

While the lungs and the stomach are the organs from which these hemorrhages most frequently proceed, yet the cases which we are about to detail show that other organs also share in this tendency.

Some years since I brought under the notice of the Association of the College of Physicians, a case of vicarious hemorrhage from the ears, and which Dr. Churchill considered of sufficient interest to give it a place in his valuable book on midwifery; but as the abstract which I supplied him is not very full, and as there is no other record of the case, perhaps I may be permitted to advert to it in order to compare it with another with which it has some points of resemblance and some of difference. The subject of the case, Mary Murphy, aged twenty-one, was admitted into Sir P. Dun's Hospital, complaining of violent pain of the head, which she ascribed to her having stopped too long in the sea when bathing. On the night of the day of her admission into hospital, she bled and largely from both ears. She complained of pain in each ear of a distressing sense of fulness which she felt in her head generally, the temporal arteries beat strongly, the face was flushed, while she said her feet were cold. The menstrual discharge had been suppressed for several months, during which she had all the symptoms of which she now complained, but in a less degree, and without the bleeding from the ears.

We directed leeches to be applied behind each ear, that she should have foot bath, and aloetic purgative medicines. These means relieved her, but she bled again from the ears on the third night. We continued the same means, but in addition had leeches applied to the interior of the thighs. The indications of treatment, which we steadily held in view, and upon which we acted, were to divert from the head and to determine to the uterus, and at the same time to strengthen the constitution.

She was a considerable time under care, and it must be confessed we had but little to boast of as to the success of our treatment, only that the intervals of the bleedings were prolonged, but there was no appearance of the return of the menstrual discharge. The hemorrhage from the ears, which occurred frequently, was always announced by an unusual sense of weight in the head, pain of the ears, and throbbing of the temporal arteries, flushing of the face, and coldness of the feet. Although the head was much relieved by leeches and warm foot baths, still she said that this relief was nothing compared to what followed when she bled from the ears.

While her feet were constantly cold, her face was as constantly hot and flushed, and during her stay in hospital, which was many months, she had on three different occasions erysipelas of the face. She had one very profuse discharge of blood from the ears, and after it seemed to improve so much that I advised her to leave hospital, hoping that she would be benefitted by a change, although not expecting much while the menstrual discharge was not restored.

She left the hospital, but was not long out when she got hematemesis, of which she had repeated returns, with occasional bleedings from the ears.

She first came under my care in June and left early in December; she was re-admitted into hospital on the 1st of the following month, and between this and 27th of April she bled twice from the ears, and discharged repeatedly from the stomach large quantities of dark grumous blood. The other symptoms then present were violent headache, severe darting pain in right ear, with pain between her shoulders and across the loins. On the 9th of June, these symptoms were much aggravated, and on the evening of that day she had a more copious hemorrhage from the ears than she had ever had; her sheets were literally soaked in blood. She now told us that she had had, as nearly as possible about a month since, a slight appearance of the menstrual discharge.

She now became affected with diarrhea attended with violent pains through the bowels, which only yielded to large doses of opium often repeated. Her health now improved considerably, and for six weeks before she left us she had no discharge of blood of any kind. She ultimately got quite well, but not until the menstrual discharge was restored.

Mary Anderson, aged thirty, servant; unmarried, a stout, strong made woman, was admitted into hospital complaining of distressing soreness of her stomach, and pain in her left shoulder, and extending down the arm, which was rigidly flexed, and the least attempt to move it caused great pain. Pulse 54, with respiration short, hurried, and nervous, jerky—face flushed. She exhibited a peculiarly nervous, frightened appearance. Just before her admission into hospital, she discharged a large quantity of blood from the stomach. She states that five months before this, her illness began with pain in the left shoulder, extending through the arm, and even to her fingers. At the same time she had pain of the stomach, and constant vomiting. She was ill a month when she discharged from the stomach a large quantity of blood. She

was now carried to bed in a fainting state, and did not leave it for two months, during which time her arm became swollen and powerless, and very painful. She now got better, but the amendment did not last. She was seized with the vomiting of blood, which caused her to be removed to the hospital. She observed that the vomiting of blood returned every month, and that the menstrual discharge, which occurred at the same time, was regular generally both as to time and quantity. Leeches were applied to the shoulder, and relieved it, and she was ordered such medicines as her nervous symptoms indicated. She had been five days in hospital when the report was, her nervous symptoms are much less, respiration more natural, pain of arm less, but she complains of pain and stiffness in left leg. She also complains of pain along the spine, between the shoulders and loins. She was admitted into hospital February 12, and on the 21st she bled from the *eyes*. She complained much of sickness of stomach, and stiffness of left leg. The left arm much less stiff, respiration much more natural and free.

23rd.—Has considerable pain in left popliteal space and groin, the vein all along the leg has a corded feel and is painful, especially in popliteal space and groin. Leeches were directed in the course of the vein, and stupes.

27th.—The arm is quite free, the leg still painful, and vein hard and corded, particularly near the foot, the dorsum of which is swollen and painful; face flushed, eyes suffused.

March 2nd.—Has bled very much from right eye. The vessels of both conjunctivæ very much congested. Condition of leg improved, less stiff, and less painful.

3rd.—Has a peculiar nervous tremor of the eyelids.

5th.—Menstrual discharge now present; had epistaxis this morning.

9th.—Bled again from the nose.

10th.—Menstrual discharge has now ceased, having continued five days. She complains of numbness in leg.

25th.—Is much stronger, and has more use of leg. Has had slight epistaxis, which relieved a feeling of weight in her head.

31st.—Again complains of pain in left shoulder; has copious lachrymation, and a serous discharge from the ear; skin bathed in profuse perspiration.

April 1st.—Bled a little from the eyes.

2nd.—Menstrual discharge now present.

5th.—Menstrual discharge has ceased.

May 11th.—Since last report, has been gaining strength, and feels herself quite well, except that the left leg is not strong, and makes her a little lame.

This case differs from Murphy's in this remarkable particular, that while in the latter there was complete amenorrhea, in the former this discharge appeared normal both as to time and quantity, and still this quantity did not seem to satisfy the system. There was besides the hemorrhage from the eyes, the epistaxis hematemesis, a serous discharge from the ears, profuse lachrymation and profuse perspiration; and that these hemorrhages bore some relation to the menstrual discharge would appear from their coming on at the same time as the menstrual discharge. In Murphy's case there was the bleeding from the ears, the hematemesis, and diarrhea. I should also place with these the erysipelas of the face as having a relation to the other symptoms.

Everything connected with Anderson's case bespoke aggravated hysteria. It exhibited to us a remarkable instance of what is often observed in hysteria, the interruption to the normal ratio of the respirations and pulse, the former so much exceeding the latter—as first noticed by Dr. Elliottson. The hurried, short, jerky respiration, auscultation not detecting the entrance of any *air* into the lungs, was characteristic. The painful and swollen condition of the upper extremity, and on its being relieved the affection of the lower extremity in the form of phlebitis, are interesting epiphenomena, and reminded us, in the case of the affection of the lower extremity, of what not unfrequently comes on in the course or towards the termination of fever which has been attended with nervous symptoms—not very unlike phlegmasia dolens—but which occurs in men as well as in women, but more frequently in the latter (independently of the puerperal state), from their greater nervous susceptibility.

The records of medicine furnish us with cases of hemorrhage both from the ears and eyes, but they are few. We had expected to have found them noticed by Frank in his very full observations, "de profluviis cruentis," but there is no mention of them there. He seems, however, to have got a glimpse of the vaso motor functions of the nerves, and regrets that the subject has not had the measure of attention bestowed upon it that its importance entitled it to. He remarks, "*nervorum qui arterias venasque circumdant comitantur ac subeunt si paucos eosque notabiles magis ramos excipiamus adhuc languet historia.*"

I have little doubt but that when our knowledge of the influence of the vaso motor nerves has increased, we shall then and there find an easy explanation of many of those strange phenomena which are met with in hysterical affections, as well as in others of a nervous character. We observe this influence very strikingly in various cutaneous affections, as in herpes zoster, whose dependence on the nervous system is now generally admitted. We conceive ourselves warranted in regarding the erysipelas of the face, which occurred three times with Murphy while under our care, as more than a mere accidental complication, and that it bore a certain relation to the hemorrhage. In the same light we regarded the lachrymation and profuse perspiration in Anderson's case, in which nature was not alone not satisfied with the menstrual discharge, which appeared normal both as to quantity and as to the period of its coming, but required besides the discharge of serum from the ears, of blood from the eyes, stomach, and nose, and further still, this profuse lachrymation and perspiration. Perhaps we may be warranted in looking upon the diarrhea that occurred in Murphy's case in the same light as supplementary to the hemorrhage from the ears and stomach. As regards the connexion between cutaneous affections and certain conditions of the nervous system, we have had an illustration of it in the person of Margaret Gibney, now about thirty years of age, who has been under our care on various occasions for many years for hysteria assuming various forms. On the occasion to which we especially allude she complained of extreme sensibility all along the spine, and pain when it was touched. There was hyperesthesia of the abdomen, and on the surface there were numerous bullæ of pemphigus, which were also on the legs and feet. We have already noticed this superficial hyperesthesia in connexion with hysteria, and exhibiting itself in the very short time a blister produced its effect. The subject was a lady who had been delicate from the age of fourteen, especially affected with headache. She was highly intellectual, and had a great thirst for knowledge; the too keen pursuit of which evidently injured her health. She married, and was the mother of many healthy children, but was never strong; she had illnesses at different times, and all, as far as we could learn, marked with nervous symptoms. While under our care she exhibited hysteria under so many diversified shapes, that we might well say "*quo teneam nodo, mutantem Protea vultus.*" She was blind for two days. At another time there was a distinct abdominal tumour, so solid to the hand that we could hardly believe

it to be what is designated a phantom tumour; but its speedy disappearance proved this to be its real character. In three days we sought for it in vain. The pain in the shoulder and arm, in Anderson's case, and speedily leaving these parts and affecting the lower extremity of the same side, reminded me of Sir B. Brodie's cases of hysterical neuralgia—cases which that eminent surgeon admits perplexed him very much at first, and which he candidly says he is not quite sure he treated quite rightly. We considered these cases of sufficient interest to bring under the notice of the Association of the College of Physicians at one of their evening meetings, when it was observed that some of these hysterical affections were more real substantial organic affections than they often appeared. To this I readily assented, and illustrated it by a case of a young woman, Eliza Warren, aged thirty, who had often been under my care for hysteria under various forms. At one time she had hemoptysis, and to such extent as to make us regard it as the forerunner of phthisis pulmonalis. At another time she had such profuse metrorrhagia as to excite suspicion of organic disease of the uterus. These hemorrhages, however, passed away, leaving the organs from whence they proceeded apparently unhurt. On another occasion she became my patient under a new form of her disease. She had been spending the evening with friends, and returning home, in the street, rather late, she was laid hold of by a soldier, from whom she with difficulty extricated herself, and ran home, which she reached much exhausted. Next day she was brought to Sir Patrick Dun's Hospital in a state of nervous excitement, which was much increased by her utter inability to speak. She tried to explain her case, but to no purpose. Her tongue was forcibly pressed against the roof of the mouth. She literally could not utter a word. Her other symptoms bore so close a resemblance to those nervous symptoms that she exhibited on former occasions that we expected the same results from the same treatment. We accordingly directed for her valerianate of zinc, camphor, ammonia, &c. However, all these remedies failed. We then thought of giving her mercury with caution, and directed that six grains of calomel should be divided into twelve parts, and that one part should be taken every second hour. It only required the six grains of calomel to affect the mouth and produce profuse salivation. Immediately her tongue became perfectly free, it was no longer pressed against the palate. The only impediment now to her distinct articulation was her sore mouth, which was, indeed,

very sore. She now got tonic medicines, and after a month's sojourn in the hospital, she left quite recovered. It may be urged that I am scarcely justified in inferring from the recovery of the speech, immediately upon the mouth becoming affected with the mercury, that the one was the effect of the other, that it might have been a mere coincidence, and that a single case would hardly warrant our assuming that it was an organic lesion yielding to mercury, without further confirmation. Such, however, was afforded us by the same person becoming again similarly affected, and being similarly treated, and with precisely similar results. Some time after she had left the hospital, having recovered her health, she engaged in service, in which she had not been long when she again became ill as she had been before, with the same loss of speech. She was now sent to another hospital, where there was nothing known of her previous history, in consequence of her incapability of communicating it. She remained in this hospital for seven months, and underwent a great variety of treatment, but with no benefit, at least as far as regarded the recovery of her speech. She left the hospital by stealth, and came to Sir Patrick Dun's. As she was affected exactly in the same way that she had been before when under my care, I now ordered for her five grains of hydrargyrum c. cretâ three times a day, and on the third day her mouth became sore, when she immediately recovered her speech. We conceive that here all doubt was removed as to the return of speech in the former instance being the effect of the mercury. In fact, it afforded the most satisfactory confirmation we could have desired as occurring in the same individual. It further confirmed us in the suspicions we have long entertained, that there is often more positive organic lesion lying at the root of those nervous disorders than is generally supposed. It was this suspicion that induced us to resort to the use of mercury in the present instance from experience of its beneficial effects in cerebral affections, marked by such symptoms as caused them to be regarded as purely nervous or hysterical. We believe there is no class of cases in which the physician has more need to be upon his guard, as they come on so insidiously, with headache, but not so severe as to cause much alarm or uneasiness until the stomach becomes affected, when its irritability announces the mischief that has been secretly going on in the head, and when, perhaps, the announcement is too late. It was observed by many physicians who had seen much of cerebro-

spinal arachnitis how often it assumed the features and character of hysteria. We have been led to extend our observations beyond our first intention, which was to do little more than to detail the two remarkable cases of hemorrhage from such unusual situations. The case of Warren, however, seemed to have some title to a place in this category, as having exhibited the hemorrhagic tendency in the profuse hemoptysis and metrorrhagia that occurred with her, in addition to the interest it derived from the rare phenomenon of the loss of speech, and this recurring and disappearing under treatment, which would seem to establish its dependence on substantial organic lesion, whatever its nature might be.

ART. XVIII.—*On the Physiological Action of Bromide of Potassium.* By J. M. PURSER, A.B., M.B., T.C.D.; Physician to the Whitworth Hospital, Drumcondra; Demonstrator of Anatomy in the Carmichael School of Medicine.

IN the course of last Autumn there came under my notice three papers on the physiological action of bromide of potassium. The great want of uniformity in the conclusions come to by the authors of these, induced me to undertake a series of experiments, the results of which I now bring forward. But before I proceed to detail the results of my own observations, I may give a very brief *resumé* of the conclusions arrived at by the writers of the essays to which I have alluded.

The first paper[a] was published in *Virchow's Archiv.*, by Doctors Eulenburg and Guttmann. They find that bromide of potassium exerts its most marked action on the heart, rapidly paralysing its muscular tissue or ganglia, and bringing it to rest in diastole; that motility and sensibility are much enfeebled, and if the dose of the poison be large, quite destroyed, and this not by an action on the peripheral nerves and muscles, but by an influence exerted on the central nervous system, whereby conduction in the spinal cord is impaired; that at a time when sensation and the power of voluntary motion are extinct, reflex movements are still possible; that later, the peripheral nerves and muscles are paralysed; and that these actions of the salt are due not to the bromine but to the potash.

[a] Ueber die physiologische Wirkung des Bromkalium, von Dr. Albert Eulenburg and Dr. Paul Guttmann. Archiv. for Path. Anat. XLI., 91.

The second paper, by Martin Damourette and Pelvet, was published in the *Bulletin Générale de Therapeutique.* I was unable to obtain the original of this essay; I know it only from a very full abstract given in *Virchow's Year Book.*[b] These authors experimented partly on frogs—partly on warm-blooded animals. They found that in the former, small doses of bromide of potassium (5–25 Mgm.) caused stupor, slowing of the pulse, and diminished capillary circulation. These effects passed off in from 6 to 24 hours. Medium doses (3–5 Cgm.) caused pain at the point of injection (the drug was always administered by the method of subcutaneous injection), contraction commencing in the muscles near the spot where the poison was applied, and subsequently becoming general; loss of sensation and power of motion occurring first at the place of injection, and afterwards extending to the rest of the body. The power of motion was lost before sensation; and cutaneous sensibility was lost before the irritability of the nerve-trunks. The nerve-trunks lost their excitability before the spinal cord ceased to conduct or to produce reflex movements. Last of all, the muscles were paralysed. Voluntary motion ceased at an early period; many movements which have been supposed voluntary were in reality examples of delayed reflex action. The brain, however, retained its power longer than did the peripheral nerves. Respiration ceased a little later than voluntary motion, and sooner when the injection was made in the back than when in the leg. Diminished capillary circulation, shown by pallor of the web of the foot, and a slow blood-flow, following a temporary hastening, were observed after medium doses. The heart got slow from the first, became feeble when respiration ceased, but continued to beat for many hours after the death of the medulla and other parts. After large doses (8 Cgm.) the action of the heart sometimes ceased before the nerve-trunks lost their excitability, especially when the injection was made in the sternal region, and instead of anemia, congestion, due to vascular paralysis, was observed in the web. The other symptoms occurred as after smaller doses, but more rapidly, and with greater intensity. The authors lay much importance on the point of the body at which the injection is made, as the symptoms at first are always local. In warm-blooded animals, Martin Damourette and Pelvet observed paralysis of motion and

[a] Etude expérimentale sur l'action physiologique du bromure de potassium. Par Martin Damourette et Pelvet, Bul. Gén. de Therap., LXXIII., 241, 289.

[b] Jahresbericht der gesamm-len Medicine, 1867, Bd. I. S. 421.

sensation beginning in the limb injected; lowering of temperature also at first local; frequent diuresis, sometimes hematuria; finally, stoppage of respiration and death from suffocation before the cessation of the movements of the heart. The direct application of K Br. to the heart or muscles, or nerves, speedily destroyed their excitability. Applied to the cord, it destroyed, first, reflex power, then the power of conducting impressions; to the brain, it caused convulsions, frequently repeated, occurring spontaneously, but increased by irritation, and accompanied by crying out of the animal under experiment; loss of voluntary movement, and cessation of reflex motion first in the head and anterior limbs, and, finally, in the posterior extremities.

The third paper, by Dr. Laborde, was published in Brown-Séquard's *Archives*. The experiments in this case were made entirely on frogs, and the salt was introduced not, as is usual, by subcutaneous injection, but by absorption through the natatory membrane of the foot. The phenomena observed were the following:—Spasmodic movements, sometimes amounting to tetanus, at the commencement of absorption; enfeeblement and loss of reflex movements, due to an action exerted by the poison on the nerve centres (cord); persistence of the power of voluntary motion often for a long period after complete loss of reflex movement; gradual cessation of the respiratory movements of the sides; continuance of the movements of the heart long after the apparent death of the animal.

We thus find, while Eulenburg and Guttmann admit that bromide of potassium has a specific action on the heart, the other experimenters deny this. Martin Damourette and Pelvet state that the action of the poison on the nervous system commences at the periphery, and only slowly extends to the nerve centres, while the others find that the nerves retain their irritability long after the functions of the brain and spinal cord are lost. And, finally, while Eulenburg and Guttmann affirm that reflex excitability persists after the cessation of voluntary motion, Laborde has seen the poisoned animals perform voluntary movements long after all reflex phenomena were at an end.

In coming now to speak of my own observations I shall first state the general conclusions at which I have arrived, and then notice

[a] Recherches expérimentales sur l'action physiologique et thérapeutique des composés de potassium et du bromure de potassium en particulier. Par M. Laborde. Archives de Physiologie, I., 420.

each of these more or less in detail. I shall, in order to avoid tediousness, not give the complete particulars of each experiment. I would have it understood, however, that my experiments were numerous, and varied so as, as far as possible, to avoid fallacy, and that in every instance careful notes of each experiment were made at the time of its performance. My observations were made exclusively on frogs. The drug was administered in solution in distilled water, and by subcutaneous injection. Some trials of the method of Laborde did not yield satisfactory results. The absorption of the salt by the web was exceedingly slow, evidently gave the animal considerable pain, and the successive phenomena of the poisoning could not be observed with the same convenience as when the method of subcutaneous injection was resorted to.

My conclusions, then, are these:—

After a temporary excitement, betrayed by spasm, and which is sometimes absent, bromide of potassium destroys reflex movement by an action on the grey matter of the brain and cord. Sensation is next destroyed, also by an action on those parts of the nerve centres whose function it is to conduct and receive impressions coming from the periphery. The power of voluntary motion persists, often for a considerable time, and, though much enfeebled, is capable of displaying itself in an intermittent manner with great energy. It is, however, eventually lost, while the nerves and muscles still retain their irritability. The effect of the drug on the heart varies. If the dose be large and injected in the neighbourhood of the thorax, the heart speedily comes to rest in diastole, and this before voluntary or even reflex movement is quite extinct; but if the dose be smaller or injected at a distance from the chest, the heart will continue to beat for hours after movement of every other kind is at an end. The capillary circulation, after a temporary acceleration, becomes slow, and stops altogether before the heart ceases to beat. Respiration is one of the first functions affected, sometimes stopping almost instantaneously on the introduction of the poison. The movements of the hyoid apparatus continue after the motion of the sides has ceased. The nerves cease to convey irritations at a late period, and, last of all, the muscles lose their excitability. The part of the body at which the injection is made influences very much the course of the phenomena, as those muscles and nerves in the neighbourhood of the point of injection are at an early period deprived of irritability.

The spasm observed at first on injection of the poison is a very

inconstant phenomenon. When well marked it is usually limited to the muscles in the vicinity of the point of injection, and, according to my experience, does not extend beyond these, as I have never observed general tetanus. The spasm passes with great rapidity into a paretic or paralytic condition of the muscles affected, and this latter state is sometimes, specially if the dose be large, induced without having been preceded by any contraction. The following experiments will illustrate the phenomena which are generally observed.

A small sickly frog had half a grain of bromide of potassium injected into the leg. Stiffness of the limb and spreading out of the toes followed, which speedily passed into paralysis. Reflex action soon ceased. Voluntary movements continued, but were feeble and difficult to excite. The head was amputated. The section of the cord caused spasmodic movement in every part except the injected leg, which was also the only part of the body of which the muscles and nerves were insensible to galvanic stimulation. A large vigorous frog had two grains of bromide of potassium injected under the skin of the back. Opisthotonos and violent retraction of the arms followed, which soon yielded, the muscles becoming relaxed and flaccid.

This local tetanus is due probably to a direct action of the bromide on the muscles, and is not brought about through nervous irritation, for it was found that a fresh muscle placed in a solution of bromide of potassium immediately fell into tetanus, while a drop of the same solution applied to a nerve did not call forth any contraction in the muscles supplied by it; and the localization of the spasm is sufficient evidence that it is not due to the pain caused by the operation of injection.

We now come to speak of the most important actions of bromide of potassium, namely, those which it exerts on the nerve centres. The first and chief of these is the abolition of reflex movement. On this point my results are identical with those of Laborde, and in opposition to those of Eulenburg and Guttmann. I have taken great pains to satisfy myself on this subject, for to this power of lowering the reflex excitability of the nerve centres is probably due the chief efficacy of bromide of potassium in those diseases for which it is successfully prescribed. The rapidity with which in poisoned animals reflex movements disappear varies with the quantity of the salt used, and with the part of the body at which the injection is made, being greater the larger the dose, and the closer to the brain or spinal cord it is applied.

In some instances when a large quantity was injected close to the brain or medulla oblongata the animal appeared to be almost instantaneously killed, and neither reflex nor voluntary movements were observed, although the muscles and nerves retained their irritability for a considerable time; but in no single case did reflex movements manifest themselves after the cessation of voluntary motion, and often many minutes (or, as in a case observed by Laborde, as much as two hours and three quarters) after apparent death the experimenter is astonished by seeing the frog make a succession of powerful leaps.

In the production of a reflex movement, or one occurring without the intervention of the will, and consequent on an irritation of a centripetal nerve, we have to consider the following stages:—First, the reception of the irritation by the sensitive nerve; second, its propagation to the centre; third, its reflexion or transference to the motor nerve; fourth, its propagation along this to the muscle; fifth, its communication to the muscle; and sixth, the contraction of the muscle. If any one of these stages be not gone through, the circuit is broken, and reflex action is impossible. Now, I may say at once that bromide of potassium breaks the circuit at the third stage, or that of reflexion. That none of the other stages are affected will appear from the following considerations:—

It is a well known physiological fact that reflex movement is much more readily produced when the irritation is applied to the peripheral termination of the sensitive nerve than when the nerve is irritated in its course. This is easily shown by the following experiment. A frog is decapitated, and while reflex action is well marked the skin is stripped from one leg. It is then found that irritants applied to this limb have little or no effect, while those applied to the opposite extremity, which is still clothed by its skin, are as potent as before to produce movement. That in poisoning by bromide of potassium the loss of reflex motion does not depend on cutaneous anesthesia, or any action of the drug on the end organs of the sensitive nerves, is proved by ligaturing the principal artery of a limb before introducing the poison, and so shutting off from its action the termination of the nerves of a large part of the body. In a frog so treated little or no difference is observed in the condition of the two limbs; reflex action is produced no more by the irritation of that protected from the action of the poison than of that whose arteries are pervious, and whose sensitive nerves are fully exposed to the influence of the salt.

Secondly, the sensitive nerves have not lost their power of conducting. The motor nerves certainly have not, for hours after all movement, reflex or voluntary, has ceased, contractions of the muscles can be induced by irritants, whether mechanical, chemical, or electrical, applied to their nerves. Now, we have every reason to believe that the sensitive and motor nerve fibres are identical with one another; the histology, chemistry, and electric phenomena are the same in both, and their different functions are due entirely to their different connexions at centre and periphery; so that if in a mixed nerve trunk the motor fibres are competent to convey impressions, we may safely conclude that the sensitive fibres, exposed as they must be to the same influences, are also capable of conduction. In the long persistence of muscular contraction, when the nerves are irritated after poisoning by bromide of potassium, we find the proof that this salt does not break the circuit of reflex action by acting on the nerve trunks in their course, or, like curara and some other more recently discovered poisons, by paralysing the end organs of the motor fibres, or by so affecting the muscular tissue as to make it incapable of contracting.

We are hence driven back to the point of reflexion in the nerve centre, and led to believe that it is here the circuit is broken. It is impossible to assign the exact mode in which this is effected, for the way in which the transference of an impression from a sensitive to a motor nerve is accomplished is one of the unsolved problems of physiology. Dean[a] has indeed described fibres passing directly from the anterior to the posterior nerve roots, forming a loop in the cord, and unconnected with cells. This mode of connexion is, however, denied by Gerlach,[b] and on physiological grounds it is improbable that the channel through which the reflexion of a centripetal impression is made to a motor nerve is formed by a direct anastomosis of the central ends of the sensitive and motor fibres, for Helmholtz[c] has found that the time occupied in the very act of reflexion is as much as $\frac{1}{10}$th to $\frac{1}{30}$th of a second, which is much longer than would be required if there were a direct communication of nerve fibres in the spinal cord.

Before I go on to describe some of the experiments there is one other physiological point connected with the central interruption of reflexion that deserves notice. A nerve centre has been described

[a] Microscopic Anatomy of the Lumbar Enlargement of the Spinal Cord, p. 10.
[b] Ranke—Grundzüge der Physiologie des Menschen, s. 771.
[c] Eckhard—Experimental physiologie des Nervensystems, s. 268.

by Setschenow seated in the optic thalami and corpora quadrigemina, whose function is to control the reflex phenomena in the cord. He states that the separation of this from the medulla, as in decapitation, produces an increase, while its irritation causes a diminution or loss of spinal reflex excitability. Now, there are grave physiological objections[a] to the theory of Setschenow, which it is not necessary to go into at present, for that the loss of reflex movement observed in my experiments was not due to any increased action of Setschenow's inhibitory centre, but to a depressing action exerted by the poison in the cord itself, is clear from the fact that in almost every instance after determining the absence of reflex movement in the unmutilated animal, the head was cut off, and in no single case did the cord manifest any increase in its reflex excitability on being separated from its supposed inhibitory centre. Since my experiments were completed a paper by Lewizky[b] has come under my notice, in which this point in the physiological action of bromide of potassium is made the subject of special examination, with results which are the same as those at which I had arrived.

When frogs were in their ordinary physiological condition the consequence of an injection of bromide of potassium was, as already stated, an abolition of reflex movement at a time when the power of jumping and of performing other voluntary acts still persisted. It was interesting to examine what the effect of the drug would be on animals, the reflex excitability of whose nerve centres was greater than usual. It is well known that in the Spring the male frog embraces the female for a very lengthened period, and that this embrace is kept up apparently without the exercise of the will, purely by reflex action. That the power even of relaxing his hold is to a great extent lost by the male frog will appear from the experiment I am about to detail. We may hence conclude that the reflex power of the cord, at all events of that part of it from which the brachial nerves arise, is exalted at this period.

A couple were taken in the act of copulation, and one grain of bromide of potassium, dissolved in five minims of water, was injected under the skin of the male in the sacral region. Almost immediately his hold of the female relaxed. Pinching or pricking the toes produced no reaction, but when the legs were extended they

[a] See Eckhard, l. c., s. 270-272. Vulpian—Leçons, sur la Physiologie du Systeme Nerveux, p. 438-440.

[b] Ueber die Wirkung des Bromkalium auf das Nervensystem. Archiv. für Pathologische Anatomie. Bd. xlv., s. 183.

were drawn up with energy. The respiratory movements ceased from the first. The animal continued to execute powerful leaps, and fifteen minutes after the injection he could still perform powerful voluntary movements. His head was then cut off. As the medulla was cut through violent spasm occurred in the limbs. After decapitation by no means could reflex motion of any kind be produced. An hour later, when the experiment was abandoned, the heart was beating and the nerves and muscles were irritable.

In order to try whether in this instance the pain caused by the injection could have made the male relax his grasp of the female, a second couple were taken, and the leg of the male suddenly amputated about midway between the knee and ankle. Violent struggles were made, and efforts to escape, but the female was held as firmly as before. A grain of bromide of potassium was then injected into the back, and before the syringe was withdrawn the arms of the male had become flaccid, and he rolled off on the table. Voluntary movements were performed after separation from the female, but complete paralysis occurred sooner in this than in the other case, as the injection was made nearer to the head in the second experiment. I next tried the effect of bromide of potassium on frogs whose reflex excitability was artificially increased. For this purpose two frogs, as nearly alike as possible, were poisoned with small doses of strychnia. In about twenty minutes the tetanic symptoms appeared simultaneously in both animals. One had then a grain of bromide of potassium injected under the skin of the sacral region, and the other was kept for comparison. In this latter, which I shall call No. I., the spasms became exceedingly violent, and were called forth by the merest touch or even by slight shaking of the table. The legs were rigidly extended, the body arched forwards, and the arms drawn inwards. In the other frog, which had been submitted to the double poisoning, and which I shall call No. II., the legs were flaccid and not extended, the body was not arched, and, though the arms were drawn inwards, they were not rigid. Touching the feet produced only a slight general twitching, but no tonic spasm. Seventeen minutes after the second injection no reflex movement of any kind could be produced in II. The tetanic symptoms in I., though less violent than before, were still strongly marked. Three minutes later decapitation of both frogs was performed. No reflex movements could be produced in II., while I. moved on the application of the slightest irritant.

I come now to consider the loss of sensation which is induced by

the administration of bromide of potassium. That anesthesia does exist I am led to believe from the fact that while the poisoned animal is quite able to jump and perform other movements, he submits to pinching, pricking, burning, the application of acetic acid, &c., without moving. That this loss of sensation is due to an action of the poison not on the peripheral sensitive organs or on the nerve trunks, will follow from the same arguments as were made use of in considering the cause of the abolition of reflex movements; and it is worthy of notice that the conduction of centripetal impressions and their reflexion, take place in the same part of the spinal cord, namely, the grey matter, so that an action of bromide of potassium on this part of the medulla may I think be fairly assumed.

Experiments on altered sensation performed on animals give always somewhat uncertain results; it is, therefore, of interest to note the effect produced in men by the administration of bromide of potassium in poisonous quantities. Puche, who gave this medicine in enormous doses, upwards of half an ounce (20 grammes) in the day, to syphilitic patients, mentions as symptoms the following:— Headache, hebetude, imperfection of sight and hearing, enfeeblement of memory and intelligence, a feeling of intoxication (d'ivresse), and drowsiness. At the same time the patient staggered in his walk, and could not stand firmly on his legs. When the doses were large and long continued a very curious phenomenon was observed. Sensibility became so blunted that the patient was unconscious of injury when his skin was pinched, pricked, or burned. Touching the cornea also did not cause winking.[a] The insensibility of the mucous membranes, more particularly of those of the mouth and pharynx and of the urethera, has been observed more frequently than cutaneous anesthesia, and has often been taken advantage of in the performance of operations on these parts.

It would appear that the loss of voluntary movement, also observed in the animals experimented upon, was of central origin, and had its cause in a paralysing action, exerted by the bromide, on the centres of volition in the brain, for after all motion was at an end, section of the spinal cord called forth spasms in the limbs; and for hours after death the nerves and muscles retained their irritability, showing that the conducting apparatus was intact. Here, as in the other experiments, the local action of the poison

[a] V. Guibert. Histoire naturelle et médicale des nouveaux médicaments. Deuxième edition, p. 408.

was well marked, for the loss of voluntary motion always occurred sooner the nearer to the head the injection was made.

The action of bromide of potassium on the heart has been the subject of the most discrepant statements. Eulenburg and Guttman affirm that the first and chief action of the drug is to paralyse the heart, and they describe a condition of cardiac dyspnea produced by it in warm-blooded animals. Laborde denies that it exerts any specific action on the heart, as do Martin Damourette and Pelvet; but these latter authors admit that if the dose be large and injected in the neighbourhood of the heart, this organ is brought to rest at a very early stage of the poisoning. Lewizky[a] admits a paralysing action on the heart. Dr. R. Reynolds[b] has not found the bromide to produce any marked weakening of the heart's action. Dr. Clouston[c] found in his patients that with increasing doses of the bromide the pulse fell gradually till it was about seven beats per minute slower than before the medicine was taken. That when the dose of the bromide reached forty grains three times in the day, the action of the heart was at a minimum, and that with still further increasing doses, the pulse became more rapid, but did not reach the standard it usually had when medicine was not being taken. Dr. Pletzer[d] found that the energy of the heart's impulse diminished, and that the frequency of the beats were lowered, the number of pulsations being generally reduced to 50 per minute, under the influence of bromide of potassium. Guibert[e] looks on the drug as a general sedative to the vascular system.

My own experiments lead me to believe that bromide of potassium exerts a decidedly depressing action on the heart, making its beats slower, feebler, and unrhythmic; that this action is local, exerted on the muscular tissue of the heart itself, and possibly on the intracardiac nervous ganglia; that the action is slower (for the same quantity of the poison) than that exerted on the nervous centres, but much more rapid than that exerted on the voluntary muscles and peripheral nerves.

When large doses, as two grains of the bromide, were injected in the neighbourhood of the heart, this organ was usually found, when

[a] Loc. cit. s. 193.

[b] System of Medicine, II., p. 282.

[c] Experiments to determine the precise effects of bromide of potassium in epilepsy. Journal of Mental Science, Oct. 1868, p. 314, et seq.

[d] On the action and therapeutic uses of bromine and its preparations. Abstract in Brit. and For. Med. Chir. Rev., April, 1869, p. 519.

[e] Loc. cit., p. 409.

exposed a few minutes after the poisoning, at rest, all its chambers widely distended, and its walls insensible to touching or scratching with a needle, and responding only with difficulty, and for a short time, to electric irritation by interrupted currents. But when the dose of the poison was smaller, or applied at a distance from the heart, the pulsations of the latter were found to continue generally for from $\frac{1}{2}$ to $1\frac{1}{2}$ hours after the death of the nervous centres. Before their complete cessation they usually became unrhythmic, two contractions of the auricles occurring for one of the ventricle. In one case, in which the bromide was introduced very gradually into the system by cutaneous absorption, after the method of Laborde, the heart did not cease to beat for five hours after the commencement of the poisoning, but towards the end its contractions were very feeble, and separated from each other by long intervals of rest. It was seen when an animal was made motionless with curara, and the heart exposed, that the injection of $\frac{3}{4}$ grain of bromide of potassium, under the skin of the thigh, produced an immediate effect on the mode of contraction of the ventricle, which became short and abrupt, instead of being sustained and slow, as it was before. The rapidity of pulsation, however, remained about the same, 28 per minute. In a few minutes the rhythm showed the irregularity already described, but became regular again after a short time. The number of beats per minute continued to vary from 35 to 28, but the contractions of the ventricle became markedly feeble, and nearly three-quarters of an hour before they finally ceased, the blood had become stagnant in the vessels of the web. A strong solution of bromide of potassium ($25°/_{o}$) dropped on the heart, stopped its movements instantaneously. The heart excised, and beating rhythmically, 28 per minute, was placed in a solution of one grain of bromide of potassium in a drachm of distilled water or artificial serum. Its beats became much weaker from the moment of immersion, but not markedly slower; they ceased altogether in $1\frac{1}{2}$ minutes. The organ was then flaccid, and had quite lost its irritability, whether mechanical or electric stimuli were applied.

My observations on the peripheral circulation, and the condition of the blood vessels in poisoning by bromide of potassium, have not been numerous or decisive enough to warrant my giving any positive opinion on the subject. The following facts were, however, observed:—The local application of bromide of potassium to the web of the foot produced great vascularity and peeling off of the epidermis. When the circulation in the web was watched during

the poisoning, after subcutaneous injection, the vessels did not show any alteration in size; the current of blood was for a very short time more rapid than before, but soon became slower, and stopped altogether before the heart ceased to beat. The experiment of Lewizky, by which he attempts to show that bromide of potassium produces contraction of the blood vessels, is, I think, open to objection. It consists in cutting off the toes of a poisoned frog, and of one unpoisoned, and counting the drops of blood which flow from each in a given time. It was found that less flowed from the poisoned animal, and from this Lewizky concludes that in it the blood vessels were contracted. The smaller hemorrhage may, however, be explained by the diminished force of the heart's contractions, and the fact that the blood-flow became more rapid after section of the plexus ischiadicus shows merely that the vessels were paralysed and dilated, consequent on this operation; but does not at all prove that they had been abnormally contracted previously. The division of the nerves does not appear to have been practised on the unpoisoned frog, so we have no means of knowing whether this would have accelerated the blood-flow in it in the same proportion. Lewizky admits that only once, with the microscope, could he detect contraction of the vessels in the web after poisoning with bromide of potassium; but states that he has seen in warm-blooded animals decided narrowing of the retinal vessels follow the exhibition of this salt.

The nerves and voluntary muscles retain their irritability long after the death of every other part. The nerves become unexcitable at a period when electric currents, directly applied, induce powerful contractions in the muscles. In comparative experiments made on poisoned and unpoisoned animals, both decapitated, the irritability of the nerves and muscles was invariably lost much earlier in the former than in the latter. The muscles, immersed in a solution of bromide of potassium, one grain in sixty, were thrown into a condition of tetanus, which soon passed off. Their irritability became gradually feebler, and was lost altogether in from ten to twenty minutes.

When the nerve was immersed in the solution of the bromide it did not give any evidence of irritation, *i.e.*, the muscle supplied by it did not contract. It lost its excitability at an early period, in one case as soon as four minutes after immersion.

[a] Loc. cit. s. 192.

No alteration in the structure of the muscle, which had lost its irritability by soaking in a solution of bromide of potassium, could be detected by the microscope.

It is worthy of note, that although solutions of bromide of potassium, of from 25 to 1·5 per cent, when applied to the nerves, did not cause any muscular contraction; yet when a few drops of a solution of the salt were injected into the spinal canal of a decapitated frog, violent convulsions of all the limbs and trunk were produced. These lasted only a few seconds, and when they ceased reflex excitability was entirely lost. The conduction of motor impressions was, however, still undestroyed, for irritation of the upper end of the cord with a needle produced spasms in the lower limbs.

I have made a few experiments on the action of three other salts which have been supposed to resemble therapeutically bromide of potassium. These are bromide of sodium, bromide of ammonium, and iodide of potassium.

Bromide of sodium in doses up to five grains caused only temporary feebleness, seldom amounting to absolute paralysis. The secretion from the skin was greatly increased, and complete recovery took place in a few hours.

Bromide of ammonium, on the other hand, is a very poisonous salt. When two grains are injected under the skin of the back the animal is apparently killed instantaneously. It lies motionless for a few minutes, but then begins to crawl or jump. All its movements, reflex and voluntary, are much enfeebled. Reflex action is more easily called forth after decapitation, but the reflex excitability of the cord is certainly not exalted by bromide of ammonium, and although some rigidity of the trunk muscles followed the injection, there was no tonic or clonic convulsion of the limbs, such as has been described by Eulenburg and Guttmann. The heart is very soon brought to rest in diastole. The nerves and muscles also lose their irritability sooner than after poisoning by bromide of potassium, and rigor mortis occurs at a very early period.

Iodide of potassium in doses of $1\frac{1}{2}$ to 3 grains killed frogs with great rapidity. The muscles in the neighbourhood of the point of injection at once became rigid, and this rigidity extended centrifugally to that within five or six minutes after the poisoning, the animal was in the most extreme condition of rigor, which state persisted. Three minutes after injection, before the rigidity had

extended beyond the hip muscles, the movements of the blood in the web had ceased, and the pigment in the cells of the skin was contracted to the centre of each cell. The heart, exposed shortly afterwards when the rigor was complete, was found widely distended and unexcitable. When examined, however, at an earlier period, although at rest, touching with the forceps caused contraction of the ventricle. The rigor appears to be due to a local action of the iodide on the muscular tissue itself. When the femoral artery was tied previous to the injection of the poison, the muscles of the calf in the ligatured limb became stiff less rapidly than those in that whose vessels were pervious, and while a solution of iodide of potassium applied to the nerve caused only slight and transient twitching in the muscle; when this latter was immersed in the same solution it was at once thrown into a condition of the most extreme rigor, which did not again relax.

This account of the action of these three poisons, though very imperfect, is sufficient to show that they differ among each other and from bromide of potassium in several most important particulars.

ART. XIX.—*Thermometric Observations on Pneumonia.* By THOMAS WRIGLEY GRIMSHAW, A.B., M.D. (Dub.); Licentiate of the King and Queen's College of Physicians; one of the Physicians to Cork-street Fever Hospital; Lecturer on Materia Medica in Steevens' Hospital.[a]

PERHAPS there is no local disease, the febrile symptoms of which so closely resemble those of the specific fevers as pneumonia. Indeed the invasion of this disease resembles so much that of typhus, that it is frequently mistaken for it in its earlier stages, and many cases are sent to fever hospitals as cases of specific fevers. Thus, in the year 1866 the total number of cases admitted into the London Fever Hospital (Liverpool-road) was 3,577; of these 590 were cases which had been sent to the hospital by mistake for specific fever; out of these 120, or about exactly one-fifth, were cases of pneumonia.[b]

[a] This paper was read before the Medical Association of the King and Queen's College of Physicians, on February 15th, 1869, and is now published, with a few notes and a fuller detail of the cases than could be given in a paper read before a society.

[b] Sixty-fifth Report of the London Fever Hospital for the year ending December 31, 1866.

Again, in Glasgow, in the year 1865-66, there were admitted into the City of Glasgow Fever Hospital 1,318 cases, 64 of which were not specific fevers, and of these 64 cases 27 were pneumonia. Out of 547 cases in 1866-67, 37 were not specific fever, and of these 15 were pneumonia. In 1867-68, out of 969 cases admitted 45 were not specific fevers, and of these 15 also were pneumonia.[a]

We thus see that in the two largest cities in the kingdom a large number of pneumonia cases are annually mistaken for fever (usually typhus) and sent into hospital. I have not had time to examine the statistics of the Dublin Fever Hospitals; but of Cork-street I can state that the number of pneumonia cases sent in there in mistake for typhus is considerable. What is the cause of these mistakes, and why is it that a large number of cases of inflammation of the lungs are annually subjected by mistake to the risk of taking fever in our fever hospitals? The answer is simply this:—A medical man accustomed to attend the poor in their own houses, is called to a patient, finds them with quick pulse, high temperature, furred tongue, and all the symptoms of commencing typhus; probably the patient says he has been longer ill than he has, and does not mention anything particular about his chest, and the medical man, consulting the interest of the patient, at once (on seeing such intense febrile symptoms) sends him to a fever hospital in order that no time may be lost in placing such a severe case in the most favourable condition for recovery. The error here is owing to the close resemblance between the febrile symptoms of pneumonia and those of typhus. This close resemblance makes the symptoms of these cases specially worthy of investigation. The chief and essential condition of fever is increased temperature; therefore when inquiring into the course a fever follows, and the variations it passes through, it is really the variation of temperature which most concerns us. The high temperature of the skin in pneumonia patients is a matter of everyday observation, but accurate thermometric observations upon them have not been plentifully recorded. Dr. Addison remarks on this high temperature, and says:—"But of all the symptoms of pneumonia, the most constant and conclusive, in a diagnostic point of view, is a pungent heat of surface; by this symptom alone the first stage of pneumonia may, in most instances, be easily recognized, and by this symptom alone

[a] Reports of the City of Glasgow Fever Hospital for 1865-66, 1866-67, 1867-68. By Dr. James B. Russell.

I have repeatedly pronounced the existence of pneumonia, before asking a single question or making the slightest stethoscopic examination of the chest. The presence of this symptom has scarcely ever yet deceived me in the most complicated forms of inflammation within the chest." Dr. Addison also remarks:—"Notwithstanding its close resemblance to an attack of continued fever—a resemblance so great that even the stethoscopist is thrown off his guard—attentive observations will, in most cases, enable us to recognize the difference." [a]

Dr. Walsh quotes Addison, and also refers to the high temperature in this disease, and states that he has himself observed a temperature of 106°. [b]

Since the clinical use of the thermometer has become more general than it was in the days of Addison, less attention has been paid to the thermometry of pneumonia, than of other acute diseases; nevertheless numerous and very accurate observations have been taken in this disease by the late Dr. Warter and by Dr. Compton. To these and to the observations of others, I now propose to add my own experience, believing that true results can be arrived at only by comparing the aggregate results of numerous observers. [c]

First, let us consider the observations of others; Dr. Warter says:—"The temperatures seem to me to rise to a considerable height at once, for in the only case in which I tried it on the 1st day, the thermometer rose to 102° 8, rising gradually . . . . . seems to attain its greatest elevation on the 4th, 5th, and 6th days . . . the 4th being the most common. On this date, temperatures of 104° and 105° are to be met with and . . . after this the temperature falls pretty rapidly *together with* the pulse . . Should the declining temperature of a case of pneumonia take a fresh rise, some new strip of pleurisy or pneumonia may be stated almost positively to exist. Contrary to what we might expect, double pneumonia does not seem to cause more febrile disturbance, as far as the curve of temperature is concerned,

[a] A collection of the published works of the late Thomas Addison, M.D., &c. By Dr. Wilks and Dr Daldy. New Sydenham Society. 1868. Pp. 13. Observations on Pneumonia read before the Guy's Physical Society, 1857.

[b] A Practical Treatise on the Diseases of the Lungs, &c. By Walter Hayle Walshe, M.D., &c. Pp. 369. Third edition. 1860.

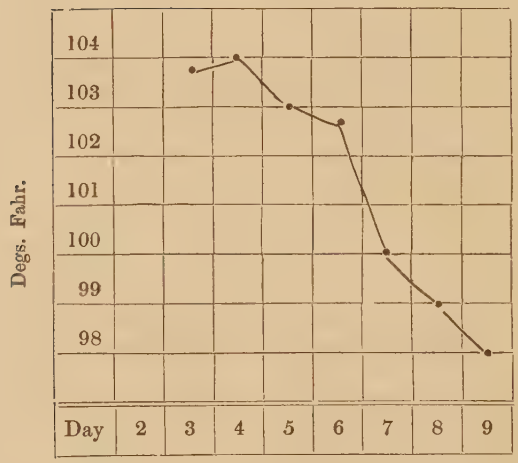
[c] Professor See, in a paper, the second part of which has been published since this paper was read, notices the close resemblance between the thermometric ranges in this disease and variola:—"Du diagnostic des fievres par la temperature." Par la Professeur See (2e article), Bullitin Général de Therapeutique, March 15th, 1869.

than by inflammation of one lung. The most fatal cases of pneumonia are certainly not those where the temperature ranges highest . . . I have taken normal temperatures where there has been bronchial breathing and mixed crepitation from top to bottom in one lung, and when the other was partially involved. Dr. Warter gives the following:—

Day.	Temperature.
3	103°·75
4	104°
5	103°
6	102°·8
7	100°
8	99°
9	98°

Diagram I.

Warter's Range.



(See diagram, No. 1) as a typical range of temperature in pneumonia.[a]

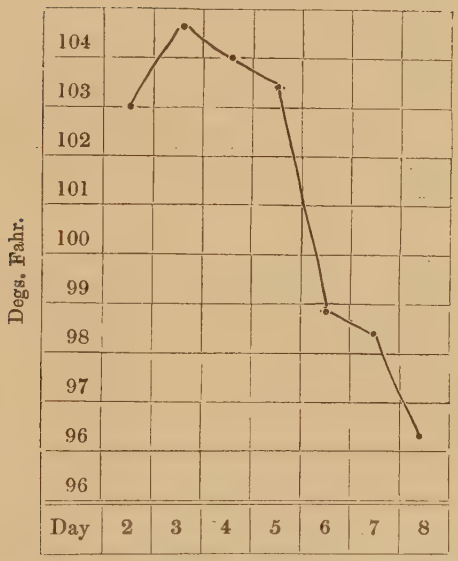
Dr. Compton does not refer particularly to pneumonia, but gives the following range of temperature for that disease, taken from a female, aged sixteen (See diagram, No. 2):—

[a] Remarks on the Use of the Thermometer in Disease, by J. Southey Warter, St. Bartholomew Hospital Reports, p. 64, Vol. ii., 1866.

Day.	Temperature.
2	103°
3	104°·75
4	104°
5	104°·5
6	98°·8
7	98°·5
8	96°

Diagram II.

Compton's Range.



The highest point, it will be observed, is 104°·75.[a]

The following range of temperature is given by Dr. Parkes[b] (See diagram, No. 3):—

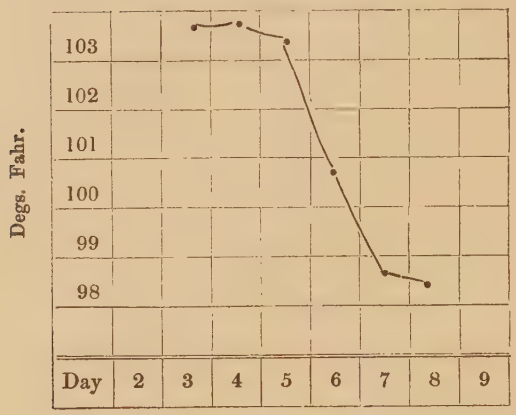
Day.	Respiration.	Pulse.	Temperature.
3	36	108	103°·6
4	36	107	103°·9
5	43	106	103°·4
6	38	93	100°·6
7	30	86	98°·6
8	31	76	98°·5

[a] Temperature in Acute Disease by T. A. Compton, A.B., M.B., &c., Dublin Quarterly Journal of Medicine, Vol. xlii., p. 60.

[b] Clinical Lectures delivered at University College Hospital. Observations on the Temperature of the Body, and on the Urinary Section, by E. A. Parkes, M.D., &c., Medical Times and Gazette, February 25th, 1860, p. 184.

Diagram III.

Parke's Range.



where no treatment was employed but a few leeches. I only give the mean temperature for each day, from which it will be seen that the highest mean was reached on the fourth day.[a]

I have now to add the experience of another observer, before I detail the results of my own observations. Since the greater portion of the materials for this paper were arranged and the most of it committed to writing, an important paper by Dr. Maclagan of Dundee, on the thermometric range in pneumonia has been published in the current number (February, 1869) of the *Edinburgh Medical Journal.* This article escaped my notice until a week ago, and owing to its vague title, "Thermometrical Observations," I did not, when I first noticed it, examine it as carefully as I should have done, if I had known that it referred especially to the disease under consideration. The conclusions of Dr. Maclagan do not altogether (though pretty closely) accord with those arrived at either by the previously mentioned observers or by myself. Dr. Maclagan's observations should have an interest which none others have, except the case recorded by Dr. Parkes already noticed,

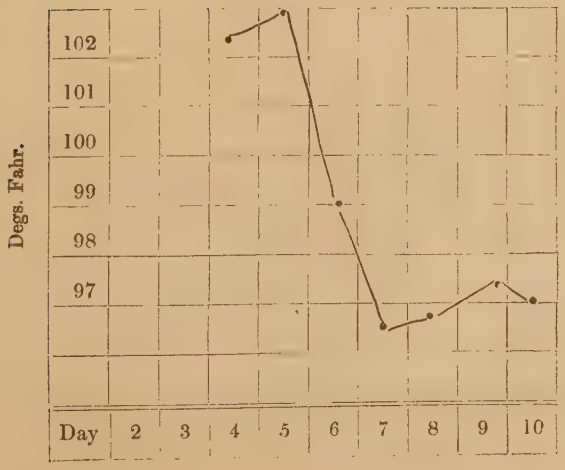
[a] At the time this paper was read before the Medical Association, the author was under a misapprehension with regard to the range given by Dr. Parkes, which led him into some errors in comparing it with the results of his own observations; therefore those who heard the paper read and may chance to meet it again in this form, may find some apparent discrepancies between the two statements, which I think it necessary thus to explain.

namely, that there were "sixteen cases of uncomplicated pneumonia (one or two of which have been detailed in his paper) which it was believed might safely be left to take their natural course." I am not sure, however, what Dr. Maclagan considers being left to take their "natural course" means, as he mentions one case as allowed to run a natural course without the application of "remedial agents," which nevertheless (although a girl of only fourteen years of age), was allowed 4 ounces of wine daily! In Dublin, however, we should consider it an important element of treatment. Dr. Maclagan also considers light diet (perhaps including *wine*), poultices, and in one case, blisters over the affected side, *no* treatment! I cannot agree with him in this, nor am I of the opinion that we can afford to stand by, and watch any case of pneumonia taking its natural course, even for the sake of science, I give a range of temperature taken by Dr. Maclagan in a case which apparently did not get any wine but was *only* blistered, as a fair average case of pneumonia. (See diagram, No. 4.)

Day.	Respiration.	Pulse.	Temperature.
4	56	120	102°·3
5	56	120	103°
6	38	96	99°·1
7	32	72	96°·4
8	32	68	96°·8
9	28	72	97°·1
10	36	72	97°·1

Diagram IV.

Maclagan's Range.



I shall now proceed to detail the results which I have arrived at from my own observations, the majority of which I have taken myself upon patients under my own care and that of my friends and colleagues, Drs. Kennedy, Mason, and Burke; but I am indebted for many to my industrious and zealous pupils, Dr. Skelton and Mr. Clements, of Cork-street Hospital, and to Mr. Rathborne, of Steevens' Hospital, whose observations are equally reliable with my own. In all cases where evening temperatures (which, however, I do not refer to in this paper) have been taken, they have been recorded by my pupils. My observations have extended over about 40 cases, selected during the past three years from those admitted into Cork-street and Steevens' Hospitals. As there are many sources of fallacy in inquiries such as these, I have excluded a considerable number of cases for various reasons, but especially as the exact date of the commencement of illness was doubtful. I find that the length of the illness of pneumonia patients is usually overrated by them, being generally dated from some trivial cold, arising a week, fortnight, or three weeks before the case comes under the care of the physician. I generally find that two or three days usually elapse from the commencement of the acute disease (or, as hospital patients say, from the time they were "real sick") until they apply for medical advice. My results, which I have obtained by daily observations, have been confirmed from time to time by casual observations on cases, of which I had not the opportunity of making continuous daily records.

In drawing conclusions, I have only taken into consideration *one* observation daily, for reasons I have elsewhere stated,[a] namely, that practically we can usually obtain but one record of temperature each day.[b]

[a] Thermometric Observations in Fever, Medical Press and Circular, pp. 73, 121, 169. Vol. i. 1866.

[b] Wunderlich, in his recent work on the Thermometry of Disease ("Das Verhalten du Eigenewarme in Krankheiten," Leipzig, 1868), rather severely reprimands me for pursuing this course; nevertheless, I have not altered my opinion that for practical purposes we must rely on one daily observation.

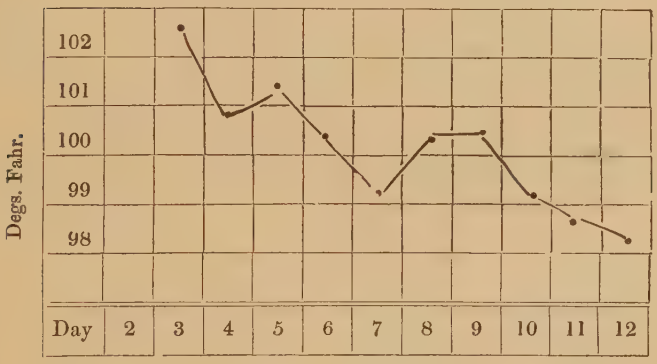
Wunderlich also seems to think that because I have noted many whole degrees, some doubt is thrown on the accuracy of my observations. He seems, however, to have overlooked the fact that a degree of his scale (Centigrade) is about double (1°·8) a degree on our scale, and that therefore the chances of noting whole degrees is much greater in my observations than in his. In my observations on typhus which Wunderlich criticises, I noted degrees, halves, and quarters, which would correspond nearly with halves, quarters, and eighths of the Centigrade scale, and are therefore nearly as minute divisions as his own. I am glad, nevertheless, to find that on the whole my observations agree very closely with those of the great German clinical thermometrician.

With a view of obtaining a *mean* range of temperature, I have made a calculation from about 20 cases. (See diagram, No. 5.)

Day.	Temperature.
3	102°·75
4	100°·8
5	101°·38
6	100°·34
7	99°·12
8	100°·11
9	100°·32
10	99°·31
11	98°·77
12	98°·42

Diagram V.

Average Ranges calculated from 20 Cases.



Such a range will, of course, seldom if ever be met with in any *one* case, but it shows what may turn up, generally as to its highest and lowest temperature, and occasionally as to its variations, namely, the highest temperature is usually met with on the 2nd, 3rd, or 4th, to 5th days, and the lowest after the 6th. We also observe irregularities; for instance, a rise on the 5th, and on the 8th and 9th days; I do not attach much importance to such an average for pneumonia, but give it merely as it is usual in other observations of the kind. The following may be considered as an average case, selected from a considerable number (about 40) complicated and uncomplicated:—

Case I.—*Fair example of average Pneumonia running an ordinary favourable course.* (Under care of Dr. Kennedy.)

Edward F———, aged twenty-one years; three days ill before his admission into Cork-street Hospital, on July 5th, 1867. (4th day). All symptoms of pneumonia, in base of right lung, well marked with considerable bronchitis; respiration, 46; pulse, 100; temperature, 103°·5.

5th day.—Much same state; respiration, 48; pulse, 108; temperature, 102.

6th.—Sharp pain at base of right chest, probably pleuritis; respiration, 40; pulse, 110; temperature, 103.

7th.—Much same state, but pleuritis less; respiration, 48; pulse, 108; temperature, 103°.

8th.—Better in every way; expectoration less and not rusty; respiration, 48; pulse, 84; temperature, 97°.

9th.—Better; respiration, 36; pulse, 84; temperature, 97°·5.

10th.—Light hemoptysis; respiration not noted; pulse, 84; temperature, 98.

11th.—The respiration gradually becoming natural; pulse, 84; respiration, 30; temperature, 98°.

12th.—Improving; respiration, 30; pulse, 84; temperature, 98°.

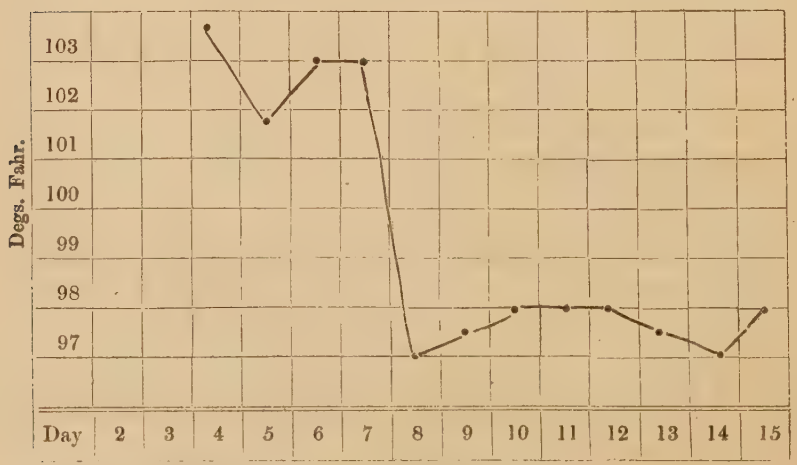
13th.—Respiration, 26; pulse, 72; temperature, 97°·5.

14th.—Respiration, 20; pulse, 80; temperature, 97°.

15th.—Convalescent; pulse, 90; respiration natural; temperature, 98°. (See diagram, No. 6.)

Diagram VI.

Range of Average Case.



As cases for observation before the 4th day are very few, and in some of these the duration doubtful, I cannot say much about them; but, as far as my experience has gone, I believe the highest temperature is reached on the 3rd or 4th day. In the specimen case which I have here recorded the highest temperature was taken on the 4th day—103°·5; a fall takes place on the 5th, but this was unusual (and in this case I could see no explanation of it), and may not be taken into account. On the 6th it is 103°; on the 7th the same; then falls to 97° (below the average normal temperature), from which time it continues within the limits of health; and this I consider the usual course of the thermometric range. I give another here as an example of a usual case of pneumonia.

Case II.—*Case of ordinary severe Pneumonia following regular course.* (Under care of Dr. Kennedy.)

John F——, aged forty years; admitted into Cork-street Hospital on January 9th, 1866, on the 5th day of his illness. Pneumonia of base of right lung; all symptoms well marked.

In this case the rusty sputum continued until the 8th day. The patient was nearly well on the 14th day, and left the hospital of his own will against advice.

The following is the range of pulse, respiration, and temperature for this case:—

Day.	Respiration.	Pulse.	Temperature.
5	42	108	103°·25
6	36	96	99°·75
7	28	84	99°
8	24	72	97°·5
9	24	72	97°
10	18	72	98°
11	24	84	97°
12	20	80	96°·75
13	20	80	97°·75
14	Discharged.		

Comparing this typical case with those of Drs. Warter, Compton, Parkes, and Maclagan:—

COMPARATIVE TABLE OF RANGES OF TEMPERATURE IN PNEUMONIA.[a]

Day	Grimshaw	Warter	Compton	Parkes	Maclagan
2	—	—	103	—	—
3	—	103·75	104·75 *	103·6	—
4	103·5 *	104 *	104	103·9 *	102·3
5	102	103	104·5	103·4	103 *
6	103	102·8	98·8 †	100·6	99·1
7	103	100	98·5	98·6 †	96·4 †
8	97 †	99	96	98·5	96·8
9	97·5	98 †	—	—	97·1
10	98	—	—	—	97
11	98	—	—	—	—
12	98	—	—	—	—

Maximum day marked thus *. Day of decided fall †.

[a] Since the above was written, I have had the opportunity of studying the ranges of temperature given for this disease by Wunderlich and See, in the works already quoted (see notes, p. 337 and 342); from these the following mean daily ranges have been calculated and reduced to Fahrenheit scale.

Day.	Wunderlich	See
2	105·9*	104·3
3	104	105·2
4	104·2	105·5*
5	102·6	105·4
6	101·7	105·6
7	†	100·3
8		97·3†

* Maximum. † Day of decided fall.

From the above table it is apparent that, according to Wunderlich, in ordinary (for

I find that the maximum is attained on the same day as Dr. Warter's, does not rise so high as his; that the high temperature is continued for about the same time (only a day less), the fall more gradual, and the normal temperature attained about the same time. Comparing with Dr. Compton, I find that the highest temperature in the range of his typical case is reached on the third day, which generally agrees with any observations I have been able to obtain for that day. The high temperature does not continue so long (to the fifth day) in his as in mine, and the normal reached sooner (on the sixth day) than mine. Comparing with Dr. Parkes, I find the highest temperature is reached on the fourth day (same as mine), maintained until the sixth day (a day earlier than mine), when it is 100·6, and the normal attained on the 7th and 8th, a day earlier in mine.

Comparing with Dr. Maclagan's case, selected by myself, the maximum is attained a day later (the 5th), the fall (on the 6th day) is earlier by two days, and the normal is gained on the 9th, a day earlier than mine.

Taking sixteen cases of my own, in which there is scarcely a doubt about the exact date of the commencement of the disease, the highest temperature was reached as follows:—

On the	3rd	day in	3 cases.
,,	4th	,,	3 ,,
,,	5th	,,	2 ,,
,,	6th	,,	0 ,,
,,	7th	,,	1 ,,
,,	8th	,,	2 ,,
,,	9th	,,	1 ,,
,,	10th to 16th		4 ,,

Thus in 8 cases, the highest temperature was reached on the 3rd, 4th, and 5th days; in 4 cases, on the 6th, 7th, 8th, and 9th; and in 4, from the 10th to the 16th days; in other words, in half these cases, the maximum was reached on the 3rd, 4th, or 5th days, and

he notices various species which would not be admitted by most British physicians) pneumonia, the maximum is attained on the 2nd day. My observations are too few for that day, either to confirm or deny this statement. He gives a second (if the term is allowable) maximum for the 4th day, which corresponds with my observations; the normal is reached on the 7th—a day earlier than in mine.

The range given by See differs very much from that of all other observers, maintaining a very high temperature with but slight variations from the 2nd to the 6th day inclusive. The normal is attained on the same day as in mine.

in this I agree with other observers, for Dr. Warter gives the 4th, Dr. Compton the 3rd, and Dr. Maclagan the 5th day, and Dr. Parkes the 4th day. From similar data I have come to the conclusion that a high temperature is maintained for from 2 to 4 days, the period varying according to the severity of the case and according to the complications that arise. Although I say a high temperature is maintained, I do not mean that it is constantly at the maximum, but is above 100°, for I believe it usually begins to fall immediately after reaching its maximum, unless some new complication arises, or is about to arise. Thus in a severe case,[a] uncomplicated, except by an attack of bronchitis after the crisis of the pneumonia had passed, in a female aged eighteen years, under the care of Dr. Kennedy, now convalescent, the temperature obtained on the 4th day was 104°·25 on the affected side, and 103 on the healthy side, which latter may be considered the real temperature of the body. The high temperature was maintained until the evening of the 5th day, and fell below the normal on the 6th day. In this case the lowest temperature (95°) which I have noted, occurred. In another case,[b] a male aged twenty-

[a] Case III.—*Case of very severe Pneumonia, with very Extensive and Sudden Fall. Comparison of Temperature on Healthy and Affected Sides.*

Bridget B., servant, eighteen years of age. Three days ill before admission into Cork-street Hospital, on February 11th, 1869. All symptoms of pneumonia well marked on right side. Abundant rusty sputum.

4th Day—Same state. Respiration 52; pulse 132. Temperature on right (affected side), 104·25; left side, 103°.

5th—Worse; but says she is better. Respiration 60; pulse 100. Temperature, right side, 102°; left, 100·5.

6th—Was much worse during night, but now (11 a.m.) much better than at the same time yesterday. Respiration 32; pulse 84. Temperature, left side, 95°.

7th—Not so well; was worse yesterday evening; some bronchitis in left lung. Respiration 36; pulse 96°. Temperature 101·2.

8th—Hemorrhage from nose; sputum not coloured; sweating. Respiration 29; pulse 100; temperature 98.

11th—Convalescent, but complains of occasional pains in sides. This case was treated by chlorate of potash, wine, and whiskey, and extensive blisters and poultices on the affected side.

[b] Case IV.—*Case of Pneumonia complicated with Pleuritis and Scarlatina.* Under the care of Dr. Burke and the Author, in Dr. Steevens' Hospital.

Henry B——, aged twenty-eight years; groom; had a cold a week ago, but dates the present attack from two days before his admission into Steevens' Hospital on January 20th, 1869; had two previous attacks of inflammation of the lungs. On admission all the symptoms of pneumonia well marked, together with some of pleuritis; inflammation confined to left side of chest.

eight, who came under my care in Steeven's Hospital (when recently acting for my friend Dr. Burke), there was considerable pleuritis with the pneumonia; the patient was also attacked with scarlatina, during the progress of the pneumonia. The temperature on admission to hospital (3rd day) was 103°·5; it fell on the 5th day, but rose again on the 6th to 184°, rather to my astonishment as all the other signs and symptoms had improved. On the 9th day the scarlatina eruptions appeared, so the rise on the 6th day may have been and probably was due to the accession of the scarlatina. The temperature in this case was maintained until the 19th day (when it was still 100°·4); on the 20th day it fell to 98, and a few days afterwards the patient was allowed to get up. In this case the highest temperature I ever recorded in pneumonia (104°·6) was noted, but not during the scarlatina attack. These cases are fair examples of severe cases of pneumonia, one complicated, the others uncomplicated. In three cases I have observed a difference in temperature on the healthy and affected sides; of one of these unfortunately I have no notes, and my observations were not continuous; in another the difference was only 0·75 of a degree; in another of the girl just referred to (see note, case 3), there was on one occasion a difference of 1°·25; in others 1°·5 and 1° difference;

January 21, 3rd day.—Pulse very weak, 120; respiration, 48; temperature, 103° 5.

4th day.—Pulse weaker, 120; respiration difficult, 55; temperature, 102°·8; right lung affected at base.

5th.—Distinct friction sound posteriorly on left side; great dyspnea; countenance anxious; respiration, 48; pulse, 108; temperature, 100. In the evening the patient was much worse, and some pleurite stitches occurred on the left side.

6th.—Better; respiration much easier, 40 per minute; pulse, 125; temperature, 104°; rusty sputum nearly gone.

7th.—Much better; respiration much more healthy; rusty sputum ceased; bronchitic sputum; diarrhea; respiration, 34; pulse, 120; temperature, 103°·2.

8th.—Delirious and restless during night; pain in head; tongue dry and brown; pulse very weak; symptoms typhoid; respiration, 40; pulse, 130; temperature, 103; scarlatina eruption well marked on arms and legs; but slight sore throat.

9th.—Better; eruption fading; crepitus still distinct at back on both sides; respiration, 44; pulse, 104°; temperature, 98°·4.

Several relapses occurred, the temperature rising on four occasions to 104°, and above 104°.

February 7th.—Temperature fell to normal, but pulse still quiet.

On February 10th he was able to sit up. He gradually gained strength, and was discharged from hospital on February 26th, 1869.

The treatment consisted of nitrate of potash and quinine internally; wine in large quantity up to twenty ounces per day. Blisters, poultices, and turpentine stupes were applied externally. On one occasion leeches were applied to the temples to relieve headache.

in all cases where a difference existed, the diseased side had the highest temperature.[a]

When pneumonia occurs *as* a complication of another disease it causes a temporary *increase* in the temperature; for instance, there was a boy affected with typhus,[b] in whom an attack of pneumonia occurring on the 9th day was preceded by a rise of temperature to 104°·5, it having previously fallen to 103°. In a case of typhoid,[c]

[a] Since the above was written I have made observations on two more cases in which I found no difference between the healthy and diseased sides. In those cases where a higher temperature was observed on the diseased than on the healthy side, a large part (nearly the whole) of one lung was affected. As the thermometer was placed in the axilla, it is probable that the high temperature marked by the instrument was owing to the proximity of a large mass of inflamed tissue. On a future occasion I hope more closely to examine this question by taking the temperature in the groin or some other part distant from the local inflammation.

[b] Case V.—*Pneumonia occurring as a complication in Typhus Fever.* Under the care of the Author in Cork-street Hospital.

Patrick D——, aged fifteen years; one day ill before his admission on September 13th, 1867; father and sister have both had typhus.

2nd day.—September 14; seen first on this day; respiration, 26; pulse, 115; temperature, 103°; bronchitis.

4th.—Worse; respiration, 24; pulse, 108; temperature, 103°·5; bronchitis.

5th.—Mottled; respiration, 30; pulse, 90; temperature, 104°.

6th.—Spots more distinct; respiration, 24; pulse, 100; temperature, 103°.

7th.—Spots darker; respiration, 40; pulse, 120; temperature, 103°·5.

8th.—Worse; respiration, 28; pulse, 120; temperature, 103°·5.

9th.—Worse; respiration, 48; pulse, 125; temperature, 104°·25.

10th.—Spots fading; pneumonia base of right lung; bronchitis still continues; respiration, 36; pulse, 120; temperature, 103°·5.

11th.—Pneumonia sputum; worse; respiration, 34; pulse, 120; temperature, 102°.

12th.—Spots nearly gone; expectoration less; respiration, 30; pulse, 90; temperature, 100°.

13th.—Spots gone; chest much better; respiration, 36; pulse, 100; temperature, 102°·2.

14th.—Better in every way; respiration, 36; pulse, 90; temperature, 101°·5.

The patient was convalescent on the 17th day.

This case was treated by tea, some wine was given when the pneumonia appeared, and blisters were applied on the chest.

[c] Case VI.—*Pneumonia occurring as a Complication of Typhoid.* Under the care of Dr. Kennedy; observations recorded by Dr. Skelton.

Honor F——, nineteen years of age, attacked by typhoid after recovery from typhus.

February 23rd, 1868.—Did not seem very unwell, but attention was attracted by the quick pulse and high temperature. She quickly got worse during the next few days; respiration, 26; pulse, 110; temperature, 103°·5.

24th.—Tongue with moist, fur in centre; had diarrhea, but bowels now quieter; respiration, 32; pulse, 100; temperature, 104°; diarrhea, typhoid character; pain on pressure, and gurgling in right iliac region.

where the temperature had been up to 104°·8, and gradually fallen to 102°, it again rose to 104°·6 on the accession of pneumonia, afterwards falling to 102°, and again rising to 104°·8 on an increase of the pneumonic symptoms. I do not find that in pneumonia of both lungs the temperature is higher than when only *one* lung is attacked, nor does the extent of tissue affected make much difference. As to the relation of temperature to other conditions, I find that the temperature attains its maximum during the period of expectoration of rusty coloured matter, but falls while this still continues; in other words, it attains its maximum and begins to fall during the second stage of the disease. Dr. Maclagan states that the fall does not occur until the third stage

25th.—Tongue bright red, slightly furred, turning brown; respiration, 48; pulse, ; temperature, 103°. All symptoms of typhoid well marked.

26th.—Small dry tongue, bright red at edges and tip; delirious at night; subsulties; respiration, 30; pulse, 106; temperature, 104°·8.

27th.—Much same state; respiration, ; pulse not noted; temperature, 103°.

28th.—Same state; respiration, 38; pulse, 116; temperature, 103°·2.

29th.—Diarrhea much worse; slight bronchitis; respiration, 44; pulse, 136; temperature, 102°.

March 1st.—Pneumonia commencing at base of left lung; respiration, 36; pulse, 126; temperature, 104°·6.

2nd.—Cough very troublesome; rusty sputum; no diarrhea; face very pale; pulse 120, very weak; respiration, 42; temperature, 103°.

3rd.—Better night; diarrhea, bowels moved three times; respiration, 46; pulse, 122; temperature, 102°.

4th.—Not so well; respiration, 42; pulse, 132; temperature, 103°·8.

5th.—Much same state; respiration, 36; pulse, 120; temperature, 103°.

6th.—Pneumonia worse; cough very troublesome; respiration, 42; pulse, 138; temperature, 104°·8.

7th.—Decidedly better than yesterday; respiration, 48; pulse, 134; temperature, 101°·6.

8th.—Improving; respiration and pulse not noted; temperature, 102°.

9th.—Better; no diarrhea; respiration, 42; pulse, 126; temperature, 102°·6.

10th.—Respiration, 36; pulse, 96; temperature, 102°.

11th.—Respiration, 38; pulse, 132; temperature, 102°.

12th.—Respiration, 36; pulse, 132; temperature, 100°·2.

13th.—Very weak still; occasional rusty sputum; sleeps badly; cough troublesome; stethoscopic signs of pneumonia still present.

14th.—Pneumonia less, but still some bronchitis; respiration, 36; pulse, 120; temperature, 99°·4.

15th.—Better; respiration, 30; pulse, 90; temperature, 101°.

16th.—Respiration, 24; pulse, 108; temperature, 102°.

17th.—Respiration, 24; pulse, 108; temperature, 96°.

18th.—Much better; respiration, 30; pulse, 114; temperature, 98°·5.

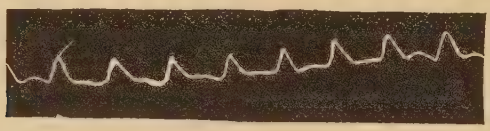
The patient continued to improve, and was convalescent on March 27th, 1869.

This case was treated by sulphuric acid and opium; wine in large quantities; blisters to chest and on right illiac region.

commences. It is well known, however, that *all* the stages of pneumonia are usually present during a considerable portion of the duration of each case. I therefore prefer to speak of the duration of the rusty sputum to speaking of any special stage as all stages may co-exist.

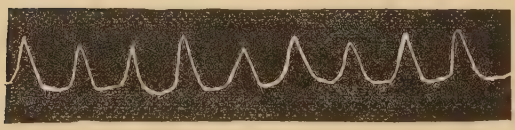
This observation has some relation to the question whether pneumonia is essentially a local disease or local manifestation of a specific fever. Certainly, the fall of the temperature before the lung mischief is on the decline—indeed we may say before it is complete—rather points to the disease being of the character of a specific fever. I am rather inclined to this opinion myself, but do not propose to pursue this question farther at present (interesting though it be). With reference to the relation of temperature to other symptoms—pulse and respiration particularly, I find that the pulse and temperature usually fall together, or the latter shortly before the former; thus, in 12 cases where the relation between the pulse symptoms is specially and exactly noted, in 6 the temperature and pulse fell together, in 5 the temperature fell shortly before the pulse, and in one only the pulse fell before the temperature. The fall in temperature does not generally, as in other diseases, precede the fall in the rate of the pulse. The high temperature corresponds also in most cases with a typhus pulse—*i.e.*, a pulse of very low tension, easily influenced by pressure. (See sphygmograms, Figs, 1 and 2.)

Fig. 1.



Male, aged 20 years; 6th day; temperature, 103°.

Fig. 2.



Male, aged 22 years; 6th day; temperature, 103°·6.

The relation between the temperature and respiration is more

remarkable than its relation to the pulse. We usually find that the temperature diminishes before the respiration decreases in rapidity; thus, in the case already cited as having a typical range, the respiration continued above 36 per minute until the 9th day, although the temperature fell on the 8th day, and I could quote several such examples.[a]

As a means of diagnosis the temperature may be useful in distinguishing this disease from typhus, for the maximum in this disease is always attained before the 6th day, usually on the 3rd or 4th; whereas in typhus the maximum is not usually attained until the 7th day or later; thus, if one finds a patient with febrile symptoms and a very high temperature (103° or more) on the 3rd or 4th day, we may suspect pneumonia, and almost certainly exclude typhus, which is the disease most liable to be confounded with it.[b] The following conclusions are, I think, justified by the foregoing observations:—

1st.—Pneumonia has (when uncomplicated) a tolerably definite range of temperature.

2nd.—The highest temperature attained is usually between 103° and 104° Fahr.

3rd.—The maximum temperature is usually attained on the 3rd, 4th, or 5th day, after which the temperature falls and reaches the normal on the 6th or 7th day.

[a] Mary C——, aged fifteen years.
On the 2nd day the temperature was 104°·5; respiration, 24.
„ 4th „ 102°·5; „ 34.

Edward F——, aged twenty-one years (already reported as typical case.)
On the 4th day, temperature, 103·5; respiration, 46.
„ 5th „ 102 „ 48.
„ 6th „ 103 „ 40.
„ 7th „ 103 „ 48.
„ 8th „ 97 „ 48.

John T——, aged forty years, also previously quoted.
On the 5th day, temperature, 103·25; respiration, 42.
„ 6th „ 99·75 „ 36.
„ 7th „ 99 „ 28.
„ 8th „ 97·5 „ 24.

Margaret K——, aged fourteen years.
On the 10th day, temperature, 101·5; respiration, 48.
„ 11th „ 99 „ 36.
„ 14th „ 98 „ 24.

Michael D——, aged fifty, very slight, circum—— pneumonia.
On the 8th day, temperature, 102; respiration, 36.

[b] All the temperatures upon which the foregoing remarks are founded are taken in the axilla with thermometers provided for me by Mr. Yeates, of Grafton-street.

4th.—The height of the thermometer does not necessarily indicate the intensity of the disease.

5th.—The fall of temperature does not indicate the cessation of mischief, but only that the disease is about to enter on the 3rd stage.

6th.—If a high temperature is maintained for a long time (more than 3 or 4 days) or a fresh rise takes place, it indicates a fresh attack in a previously healthy part, or the advent of a complication.

7th.—The temperature and pulse usually, though not always, rise and fall together.

8th.—The temperature usually decreases before the frequency of the respirations diminish.

9th.—A high temperature before the 6th day in a doubtful case generally indicates it to be one of pneumonia and *not* of typhus.

ART. XX.—*On the Therapeutic Properties of Ferric Iodate.* By CHARLES A. CAMERON, Ph.D., M.D., L.K.&Q.C.P.I.; Professor of Hygiene in the Royal College of Surgeons; Lecturer on Chemistry in the Medical Schools of Steevens' Hospital and Peter-street; Analyst to the City of Dublin, &c., &c.

ALTHOUGH it has been proposed to employ the iodates as therapeutic agents, these compounds do not appear to have found any favour with the practitioners of medicine. It has been urged as an objection to their use that they part with their oxygen too readily. Unless it can be shown that in parting with their oxygen free iodine or hydriodic acid is simultaneously evolved, I cannot see the force of such an objection. It appears to me that amongst the numerous compounds of iodic acid there are to be found valuable remedial agents, and I venture to suggest the employment of one of them—namely, ferric iodate (iodate of the sesquioxide of iron)—as a substitute for iodide of iron.

Before explaining the reasons which have led me to suggest the therapeutic use of ferric iodate, I propose, for the benefit of those whose chemical knowledge may be somewhat rusty, to briefly describe the preparation, composition, and physical properties of this body.

There are two iodates of iron—ferrous (iodate of protoxide of iron), and ferric (iodate of per or sesquioxide of iron). The

ferrous iodate is an unstable compound, but the ferric iodate does not readily undergo decomposition. On mixing iodate of sodium ($NaIO_3$ or NaO,IO_5, old notation) with an ammoniacal solution of ferric sulphate (sulphate of the peroxide of iron) a yellowish precipitate of ferric iodate takes place. The formula of this precipitate appears to be as follows:—$Fe_2O_3.2I_2O_5.8H_2O$. It is, therefore, a basic salt, containing 51 per cent. of iodine and 11 per cent. of iron.

Ferric iodate is a fine yellowish red powder, closely resembling Turkey rhubarb in appearance. It is nearly insoluble in water, and is decomposed by hydrochloric acid, with the evolution of chlorine. It dissolves in nitric acid and sulphuric acid without evolving any odour, and forms with those fluids a colourless solution. If carefully prepared it is inodorous, but it is likely to possess a very faint odour of iodine. It is very nearly tasteless. At the temperature of boiling water it remains long unchanged; nor has the atmosphere any effect upon it.

The crystallized protiodide of the Pharmacopœia contains 63½ per cent. of iodine and 13½ per cent. of iron; its formula being FeI_25H_2O. It is therefore richer in iron and iodine than the ferric iodate, but in the two salts the same relative proportions of iron and iodine exist.

The therapeutic value of the iodide of iron is undoubtedly very great, and few medicines are at the present time more generally or largely prescribed; but the instability and intensely disagreeable flavour of this substance are great drawbacks to its employment. Syrup of iodide of iron and *Blancard's pills* are devices not always successful to prevent the disruption of the particles of the iodide of iron. The ordinary pills of the iodide of iron are a most uncertain preparation; and Dr. Rawdon Macnamara remarks in his *Materia Medica*, "that when kept for some time they become very soft and lose all trace of iodine."

Iodate of iron is sparingly soluble; but in the case of so powerful a medicine great solubility is perhaps not a desirable attribute. Calomel is insoluble, but is it the less valuable because it is so? Antimonial powder and many other of our most valuable remedial agents do not dissolve in water.

As a substitute for iodide of iron, the iodate of iron possesses great advantages, some of which I shall enumerate. In the first place, it possesses a stability of composition, the want of which is so serious a disadvantage in the case of iodide of iron. Secondly, it is

a preparation capable of easy administration, being nearly tasteless, and producing no discolouration of the teeth. I have known many cases where patients exhibited so great a distaste to the acrid iodide of iron that they could not take it in any form. It is probable that *iodism* is produced more frequently by the use of the ferrous iodide than by the alkaline iodides. Thirdly, whatever medicinal virtues are possessed by the chlorates, so far as their oxygen is concerned, are in all probability also to be found in the iodates, which they so closely resemble. The only difference between common culinary salt and chlorate of sodium (chlorate of soda) is the existence of a large quantity of oxygen in the latter. There is the same difference between the chloride of potassium and the chlorate of that metal. In addition to the powerful properties which it derives from its iron and iodine, ferric iodate also possesses the advantage of having a large percentage of "condensed" oxygen. If, as Dr. O'Dwyer states to be the case, chlorate of potassium modifies the action of mercury upon the system, and prevents it from running riot, iodate of iron might have the same effect. In syphilitic affections it would be worth trying whether the iodate of iron might not with advantage be alternated with the mercurial preparations when it is found necessary to employ the latter.

I have not the opportunity of determining the relative merits of the sesqui-iodate of iron *versus* iodide of iron or the iodide of potassium in actual practice; some of my medical friends have, however, undertaken the experiment, and so far, they report favourably of the iodate. A member of my own family, who could never tolerate in any form the iodide of iron, is now taking pills composed of three grains of iodate of iron and two grains of extract of hyosciamus.

The ferric iodate has been introduced into several of the Dublin Hospitals, and, amongst the physicians who are employing it, I may mention Sir Dominic Corrigan, Bart., Drs. Hudson, Little, Jennings, Forrest, Ringland, Roe, D. Hewitt, Quinlan, and Macnamara.

Dr. William Moore, Professor of the Practice of Medicine in the University Medical School, informs me that he has prescribed the iodate of iron about twenty-five times during the last fortnight, and with great success. In no case was *iodism* produced, and no complaint was made relative to the flavour of the medicine. Dr. Moore used it chiefly in the case of atonic females, especially where there was reason to suspect a strumous taint.

Dr. B. F. M'Dowell, Surgeon to Mercer's Hospital, and Lecturer

on Materia Medica in the Ledwich School of Medicine, has favoured me with the following communication:—

"Since you suggested to me the use of the sesqui-iodate of iron as a therapeutic agent, I have employed it frequently, and in some cases I found it almost invaluable.

"I believe it to be best suited where free iodine, in any form, or its unstable compounds, such as those of iron, are likely to disagree with the patient, or where a permanent combination of iodine with iron is indicated.

"In two cases in which I employed it the iodides of iron and potassium had been each tried, and had been followed by the peculiar train of symptoms which are developed by those remedies in certain idiosyncracies—such for example as frontal headache, coryza, &c.—and in these cases the ferric iodate was taken regularly with great benefit, and was not followed by any unpleasant symptom.

"My experience so far is necessarily limited, and I cannot therefore lay down any exact guide for the cases in which it will be found most useful; but I shall quote one case from my note book in which its employment was followed by signal benefit to the patient.

"Mr. ——— consulted me in the latter end of February for chronic induration of all the glands in the left groin. He had had a mild roseolar eruption and erythema of the fauces about three months previously, for which he took a mild mercurial course, under the influence of which and of an antiseptic gargle the eruption disappeared, and the throat got well. But he also had gonorrhea at the same time, which also disappeared under appropriate treatment. About six weeks ago a few of the glands of the groin became indurated to a slight degree, and this continued to increase until all the glands became engaged, and the groin was in a solid flag-like state of chronic inflammation, with no tendency to suppuration. He was anemic, his stomach was irritable, and he was unable to take exercise. Several remedies had been employed but without benefit, and the iodide of potassium did not agree with him, and its use was discontinued. He was ordered three grains of the sesqui-iodate of iron three times a-day, and a pint of porter, with fresh meat, every day, and an occasional purge. In a fortnight the induration had entirely disappeared, and he has not since suffered from it.

"I will gladly give you the particulars of other cases after a little time."

The iodate of iron may be given in the form of bolus, electuary, powder, lozenge, or pill—the last form is probably the best, except, of course, in the case of children. The dose is from two to five grains. It may be used wherever iodide of iron is indicated, but it partakes somewhat more of the character of a ferruginous preparation than the iodide—a feature which may in many cases prove desirable rather than the reverse. A two-grain dose of ferric iodate may be given in a three grain pill. I have some pills each composed of two grains of the iodate and one of extract of gentian, which were prepared a month ago. They have undergone no change since their preparation.

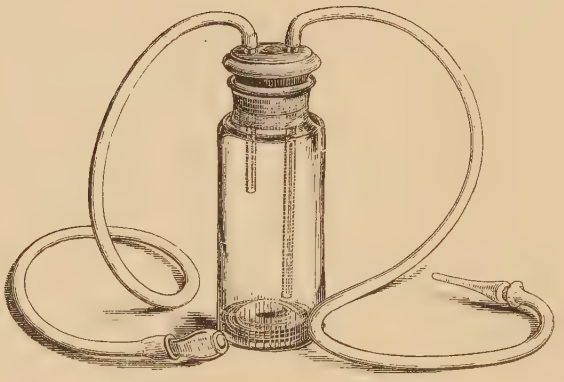
ART. XXI.—*The Treatment of Gonorrhea by an Improved Continuous Injector.* By Mr. MORGAN, F.R.C.S.I.; Surgeon to Mercer's Hospital and to the Westmoreland Lock Hospital; Professor of Surgical and Descriptive Anatomy R.C.S.I.

THE practical difficulty of thoroughly applying a medicated solution to the male urethra has been frequently recognized by practitioners, and has led to many differences of opinion as to the absolute value of injections as ordinarily applied—some believing that they attain much more fully the deeper parts, and others, again, that it is sufficient to reach the first two inches, or the "specific region" of the canal.

The superior efficiency, however, of injections that fill the urethra and reach to the deeper parts, is generally admitted, and the experience of continental and other surgeons confirm this view.

The few instances of *post mortem* examinations that have occurred prove the inflammation to have extended deeply down the canal; thus Rokitansky gives as the pathological change, "that not only the fossa navicularis but every point as far as the prostatic portion, and specially the vicinity of the bulb, is liable to become diseased." Sir H. Thompson, from *post mortem* observations, found "unusual vascularity at the bulb and fossa navicularis."

The result of deep urethral injections have, in the hands of Bonnet, Diday, Bumstead, &c., proved the most successful, the chief method of applying them being by means of catheter-pipes attached to the syringe, Tiemann's "universal syringe" being that generally used and most applicable. In the using of this syringe, however, or, indeed, of any other, I have found inconveniences; and I think it will be admitted that, with timid and nervous



patients particularly, there is great difficulty, and that many who have just been the subjects of gonorrhea will not allow or bear the introduction of an instrument of any length into the passage when in a state of irritation.

I believe that the failure and uncertainty of most injections arises not so much from their composition as from their insufficient application and non-diffusion over the surface; and also that the frequent and large use of a diluted and weak injection is better than the more limited application of a stronger one. To carry out the latter object I have put together an arrangement for applying a diluted application to the deep parts of the urethra, using the principle of the chemical "wash-bottle" as the injecting force.

The injection-point is made rather abruptly tapered so as to plug the orifice with tolerable ease. The patient's hands are both left free, the one to hold and support the penis, the other to introduce and keep steady the injection-point. The mouth-piece leading to the bottle is to be held between the teeth, and by blowing more or less energetically, a continuous injection can be attained. The more fully the injection-point is introduced, so as to fill the orifice, the more deeply will the application penetrate by the filling of the urethra. The bottle holds about two ounces, which I find the most convenient and useful quantity for use. In the acuter stages, great relief can be given by the use of this application in introducing sedative solutions, such as ʒss. vel. ʒi. tinct. opii ad. ℥i. aquæ, or the ext. opii aquosi, gr. i. ad. ℥i. aquæ, which answers even better; the solution should be previously warmed by letting the bottle stand in hot water, and this may be used three or four times a day.

After the first few days I have found the bisulphite of lime solution (prepared by Medlock and Bailey) as the most useful medicament, added, according to the sensations of the patient, ʒi. vel. ʒii. ad ℥i. aquæ; it seems to influence specially the virulence and quantity of the discharge.

If any of the ordinary ingredients in use be preferred, such as sulphate of zinc, tannin, &c., they should be applied in very dilute form, chiefly to be regulated by the sensibility of the urethra and the feelings of the patient, as a large surface is brought under the influence of the application by the full and gentle distension of the urethra by this means.

In spermatorrhea, also, I have found the application of a sedative solution of tinct. opii ʒss. ad. ℥i. aquæ, used night and morning as

most efficacious in allaying hypersensibility, unless in such rare and severe cases as require the application of strong local applications by the porte caustique, or sponge.

Notwithstanding the frequency of the affection in the male, the following *Abstract of Cases under Treatment in the Westmoreland Lock Hospital for the Half-year ending December* 31, 1868, will show how seldom women are compelled to seek admission to hospital for uncomplicated gonorrhea.

One hundred and ninety-six venereal patients have been under my observation and treatment during the past half-year; 104 of these were suffering from sores on the genitals, with or without bubo or constitutional signs.

26	were admitted	who never	were before	diseased.
21	„	who were once	diseased previously.	
16	„	„	twice	„
6	„	„	three times	„
8	„	„	four times	diseased previously.
6	„	„	five times	„
83				

Five were uncertain, and had suffered mostly from gonorrhea.

Notwithstanding the difficulty of securing reliable data as to the occurrence of primary disease, I have, after not a little trouble, obtained the following tolerably accurate information as to the length of time during which several, the subjects of genital sores in a *virulent* form, have *admitted* they led an irregular life while suffering from the disease, even up to a period of three months previous to entering hospital.

13	cases	existed	before admission	1 week
14	„	„		2 „
5	„	„		3 „
9	„	„		4 „
2	„	„		5 „
2	„	„		6 „
4	„	„		8 „
3	„	„		12 „
52, total.				

The cases where the genital sores have existed for *over three months*, while leading an unvirtuous life, have not been infrequent.

In 3 cases	the sore had existed	.	.	4 months
„ 3	„	„	.	. 5 „
„ 1	„	„	.	. 10 „
„ 1	„	„	.	. 11 „
„ 1	„	„	.	. 13 „
„ 1	„	„	.	. 14 „
„ 1	„	„	.	. 16 „
„ 1	„	„	.	. 17 „
„ 2	„	„	.	. 18 „
„ 1	„	„	.	. 20 „
„ 1	„	„	.	. 36 „

16, total.

These had assumed more or less the character of chronicity; they were not auto-inoculable, but of great extent and slow in their progress; there may be some question as to their special power of contagion; if they are contagious the mischief done is incalculable, and shows how disease may pervade the community at large.

The following table represents the periods during which the patients admitted they had been leading an irregular life, previous to their admission to the hospital as diseased.

For 1	month	.	. 3 cases	For 7	years	.	. 7 cases
„ 2	„	.	. 1 „	„ 8	„	.	. 5 „
„ 3	„	.	. 5 „	„ 9	„	.	. 2 „
„ 4	„	.	. 2 „	„ 10	„	.	. 6 „
„ 5	„	.	. 1 „	„ 12	„	.	. 1 „
„ 6	„	.	. 6 „	„ 13	„	.	. 1 „
„ 9	„	.	. 5 „	„ 14	„	.	. 1 „
„ 12	„	.	. 8 „	„ 15	„	.	. 1 „
„ 18	„	.	. 12 „	„ 16	„	.	. 1 „
„ 2	years	.	. 4 „	„ 17	„	.	. 2 „
„ 3	„	.	. 8 „	„ 20	„	.	. 1 „
„ 4	„	.	. 7 „	„ 25	„	.	. 1 „
„ 5	„	.	. 9 „				
„ 6	„	.	. 4 „	104			

Of these several had been diseased on previous occasions.

The cases admitted suffering from genital ulcers for the *first* time were 26 in number—mostly young girls, robust and otherwise healthy, aged from 15 to 23 years—the sores were, as a rule, non-indurated; the glands in the groin did not often suppurate, but were frequently swollen and painful on one side only:—

5	cases were followed by	mucous patches only
1	„ „	„ and laryngeal ulcer
3	„ „	papular and patches
3	„ „	mucous patch
1	„ „	bubo and patch
2	„ „	papular eruption only
2	„ „	secondary ulcers
1	„ „	pains and ulcers of fauces
1	followed by	papular and severe pains
1	„ „	and patch of fauces
1	„ „	and erythema of throat
1	„ „	bubo and inoculated sore
2	„ „	iritis and pains
1	„	roseolar only
25		

There is but one case which has not as yet shown constitutional symptoms.

General Tabulation of Cases under Treatment, not including Primary Sores:—

Papular eruptions,	10 cases
Papular and roseolar, mixed,	4 „
Ecthyma,	4 „
"Patches" of anus and genitals,	14 „
Syphilitic maculæ,	1 „
Tubercular eruption,	2 „
Iritis of one eye,	3 „
Do. of both eyes,	1 „
Pemphigus,	2 „
Anal fissures (severe),	1 „
Rupia,	2 „
Secondary ulcers,	4 „
Myringitis,	2 „
Ulcers of the mouth,	2 „
Ulcers (deep) of the tongue,	4 „
Extensive sloughing ulcer of pharynx,	2 „

Ulcerations of the larynx, . . .	7 cases.
Extensive ulceration of the rectum, . .	2 „
Severe syphilitic pains, . . .	5 „
Large gummata, ...	3 „
Gummata on the heart, . . .	1 „
Incidental abscesses, ...	5 „
Prolapsus uteri and vagina, . . .	3 „
Urethra destroyed by ulceration, . .	3 „
Nodes and Exfoliations, . . .	5 „

The comparative frequency of these manifestations where the subjects of them have been affected several times by genital sore, in contrast with the preceding table, where they have been but once the recipients, is interesting. The formation of patches and the development of the papular eruption being the earlier and more frequent evidences of constitutional infection. Several of these cases were the subjects also of gonorrhea, complicated with ovarian irritation, with abscess of the labium, or suppurating bubo.

Art. XXII.—*Disease of the Knee-Joint—Amputation—Recovery.*

By R. Tuthill Massy, M.D., L.R.C.S.I.

A gentleman aged twenty-three, when about five years old complained of pain in the knee-joint, which increased on motion, and gave evidence of what is usually called white swelling. He was treated for some time at a hydropathic establishment at Great Malvern without any benefit. Afterwards he had the usual starch bandage and iodine treatment at home. Lastly, he was placed under the care of a female rubber at Southport, in Lancashire, who took the case and promised, as all such persons do, "a cure" from her treatment by friction, &c., &c.

Much was not permanently expected, for by the father's side there is some delicacy in the family. One of his aunts has disease of the bones in her fingers quite incurable, except by removal, which she would not submit to. His eldest brother died of acute diabetes at about the age of twelve.

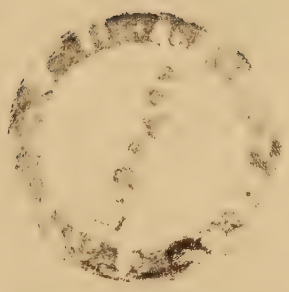
After five or six years of ineffectual treatment in the case before us, amputation was decided on, but the surgeon at the last moment declined the operation, thinking there was some lung disease, although I had previously pronounced the lungs healthy, but has since said he feared the diseased bone was extending

upwards. At this time there were but a few openings, and it was a case in which the joint might have been safely removed had the operation been much in vogue.

I have always regretted this surgical indecision, and have continued to repeat my unchanged opinion until the patient began to think with me; and finally, he had Sir Wm. Fergusson to examine the limb on the 9th of October, 1867. Sir Wm. writes:—"My opinion is that so much disease still remains that there can be little hope entertained that the discharge now going on will ever cease. It is possible that all might go well after excision, but the circumstances are not peculiarly favourable for that operation. Taking all into consideration, I believe that amputation in the thigh would be the best course. The risk of that operation would certainly not be greater than usual—rather, I think, less—and should it be performed, I do not think it necessary to make the incisions high up in the limb, for I imagine that the really incurable part of the disease is at the end closely above the knee itself."

On Wednesday, the 16th, everything was prepared for the operation. Dr. Charles Kidd gave chloroform, and with the assistance of Mr. Pope I removed the limb by a long lower and a short upper flap. The knife entered about the upper third of the thigh bone, about half an inch above where the roughness on the bone had ceased, and the knife passed out above and below immediately opposite the old fistulous openings, but clearing them so as to form an excellent stump. Six ligatures were required for the enlarged arteries and two sutures to keep the flaps in apposition. The parts were bathed with tincture of calendula in water; the patient had a good night. I may here mention that a carriage drive was prescribed up and down the Brighton promenade on the morning of the operation, and a breakfast cup of beef-tea an hour before inhaling the chloroform, which was considered very judicious.

The diseased leg had a rather sad appearance both before and after removal. The right knee and foot were twisted outwards; limb shortened; calf wasted; knee bent, anchylosed, swollen; skin of a deep red, perforated with about twenty oval openings, from which exuded a dark stinking pus; this covering when cut through was dense, and where the holes traversed the integuments to the joint they had a hard cartilaginous lining. The sciatic nerve was imbedded in a dense structure, and two sinuses led by it from the popliteal space into the joint.



Our illustrations give two (half-size) views of the dislocated and diseased bones, one—the external and anterior—exhibiting the patella adhering by a bony union to the outer condyle of the femur, while two bony pillars connect the heads of the joint together; between them an oval opening is visible, which communicates with the spongy heads of both bones, and from this a brown fetid matter issued into the open joint. The interarticular and cartilaginous coverings were quite gone, completely absorbed. A sharp horny point of bone and some other irregularities are thrown out from the upper point of the patella, which were often the hidden cause of pain and irritation.

The second illustration gives the section from above downwards and inwards through the spongy heads, which were large and expanded with cells containing a dirty coloured matter. The head of the fibula is also diseased and quite rotten under the saw; cartilage and ligaments gone; bone smaller, and appeared to have ceased to grow since it lost its joint. The femur had rough folds of bone thrown out along the outer side extending up to about an inch of the upper third, where the amputation was performed. Notwithstanding this I believe the knee-joint might have been successfully excised ten years ago, when first amputation was proposed, and those years of suffering prevented.

On opening the ankle-joint I observed a small hole about the size of a split pea in the neck of the astragalus, having a pearly colour when cut through with the scalpel. The bone readily yielded. The tissue contained a glairy matter—the embryo of scrofulous disease in the bone. This accounted for an aching pain which had been frequently felt during the last few months after exercise, and which the patient considered rheumatic.

Present state—Oct. 17th.—Had a good night; looks cheerful.

18th.—Going on well; stump cool; tongue improving; "the old bitter taste" has left his mouth.

19th.—Dressed the stump; removed one suture; wound looks healthy.

20th.—Offensive yellow discharge from the upper flap, just where the knife passed out in front of one of the fistulous openings; covered the part with lint made wet with an infusion of calendula. Ordered roast mutton for dinner.

21st.—Discharge offensive from ligatures; sol. potassæ permang. Dinner, roast partridge, with bread sauce.

22nd.—Bowels moved; had a small chop, potato, and rice; is not accustomed to stimulants, and therefore does not desire wine.

23rd.—Patient cool and comfortable; looks cheerful; windows open day and night; breakfasts at eight, cocoa, toast, and an egg; has beef-tea about noon; dinner at two o'clock; tea at six o'clock; baked apple, or something light, at nine o'clock p.m.

25th.—Discharge diminished; smell fetid; spirits good.

27th.—Felt sick, I fear from too good living; a cut from a sirloin! pulse 100; headache. Prescribed aconite, m. ii. ex. aq. ter. die.

28th.—Better; pulse lower; bleeding from inner angle of stump from the external saphena vein.

29th.—Oozing very much; touched the vessel with nit. argent.

30th.—Dull day; some pus from two openings.

31st.—Dull day; feeling of sickness; low spirits.

Nov 1st.—Bright day; patient better; two ligatures came away.

2nd.—Feeling sick; bowels moved.

4th.—Fine day; improving; two more ligatures have come.

15th.—Swelling in course of the remaining ligatures.

18th.—Came down stairs this day; looks much younger.

19th.—Better in health and spirits; less discharge.

20th.—Not so well; discharge over the ligatures.

21st.—Continues to go down to drawing-room.

25th.—Secured ligatures to a ring of india-rubber, with the hope that its elastic action would induce them from their fixed position. Patient went out in a chair.

26th.—Looks remarkably well; enjoys going out.

27th.—Lovely day; went on the grand pier.

30th.—To-day while testing the ligatures, each in turn gave way from some attachment, and came out half an inch. The ligatures were of the usual hospital housewife thread.

Dec. 7th.—Ligatures yet holding on; most troublesome. I have almost vowed against all ligatures, and purpose in future to twist and pin down arterial vessels.

23rd.—Patient left Brighton for home.

30th.—Letter after letter arrived about these ligatures. I tried several inventions, but the most successful was the drawing the ligatures through about two inches of a gum-elastic catheter No. 4; each day the ends were carefully rolled up like a little windlass.

Jan. 9th.—*Out* is the intelligence for to-day, and thus a great source of anxiety is also removed from me.

12th.—Patient's report:—"I thought you would like to know how I am getting on since the last ligature came away. I am glad to be able to give a most flourishing account. The stump has diminished in size considerably, and is firm and very healthy-looking. All discharge is stopped, except only to *mark* the lint during the day. Nothing more. The small places are healing up satisfactorily."

June 19th.—Patient writes:—"I am thankful to be able to report very well indeed of my new leg. I am doing very much better than I expected, and can walk quite easily and with *comfort*. In walking I can bend the knee and ankle-joint just as naturally as in the other limb. Also in sitting, &c., the limb bends most easily and naturally."

Feb. 10, 1869.—He now rides on horseback; appears to have grown taller by some inches; chest also increased in width; looks stout and well.

These details may appear tedious when compared with hospital reports, but will, I hope, be of interest to some of my readers. The case has many points for study. One is, that under the most favourable position, with a charming country residence, excellent diet, often the best surgical advice from London and in the country, an orthopedic surgeon of some note, sea air, &c., &c., yet the disease was of such magnitude that nothing could arrest its progress.

The second point was the great injury to the boy's health in battling with so much pain and suffering, by which his features were altered and his growth diminished.

An external point must here be considered—the anxiety of his parents and the distress to his sisters in being obliged to breathe the offensive odour which for many years followed in his track, and caused a train of distressing symptoms in one of the family, viz., depression of spirits, loss of colour, falling of the hair, languor, &c., &c. Since the amputation health has returned in this case, and all the household are stronger.

In conclusion, I may relate an evidence of the patient's close sympathy with his departed leg. The father expressed a wish to see the bones of the knee. On my next visit I unfolded them from a sheet of paper, and said that for a week I had to pour boiling water over them to extract the fatty matter which in the morning was floating on the surface of the water. The patient looked at

his mother and said:—"You remember my telling you every evening *but one* for a week how I felt as if hot water was poured on my knee."

One evening I omitted this performance! We were surprised at this conversation, and none more so than myself, for even the servants in my house, which is some distance from his lodgings, were not aware of the use to which I applied the water when called for.

This pathological preparation is now among the "organs of locomotion" in the Museum of the College of Surgeons, St. Stephen's-green, Dublin.

ART. XXIII.—*Cases in Practical Medicine and Surgery.* By RICHARD J. HALTON, L.R.C.S.I.; L.R.C.P.E.; Kells, Co. Meath; Medical Officer to Moynalty Dispensary District.

I.—ACUTE RHEUMATISM—TYPHOID SYMPTOMS AND DYSPNEA, DUE TO DEEP SEATED ABSCESS IN NECK.

II.—PLASTIC DEPOSIT IN BRONCHIAL TUBE, GIVING RISE TO ANOMALOUS CHEST SYMPTOMS.

III.—NEUROSIS OF SENSORY AND VASO-MOTOR NERVES OF ARM DUE TO SUPPRESSED MENSTRUATION.

IV.—DELIRIUM TREMENS ALTERNATING WITH CONGESTION OF LUNGS.

V.—SLEEPLESSNESS IN FEVER, TREATED BY OIL OF TURPENTINE.

VI.—LARGE GLUTEAL ABSCESS TREATED BY THE DRAINAGE TUBE.

VII.—HYSTERIA OF AN AGGRAVATED CHARACTER.

VIII.—EXTEMPORIZED CHEEK COMPRESSOR.

IX.—TREATMENT OF THE DYSPEPSIA OF DISPENSARY PATIENTS.

CASE I.—Mary Walsh, aged twenty-eight, milliner, got ill on Monday. I saw her on Friday, March 3rd, 1863; I found her labouring under a severe attack of rheumatic fever pains in almost all her joints, furred tongue, quick pulse, and her skin bathed in profuse acid perspirations. I could discover nothing abnormal in the sounds of the heart. I ordered a mixture containing nitrate and chlorate of potash, and wine of colchicum, an aperient, and opium at night to procure sleep; I also prescribed opium and potash stupes for the joints. The treatment seemed to give some

relief, and the case went on very well until Sunday morning. At the time of my visit on that day, however, a most alarming change was apparent. All the symptoms had assumed a low typhoid type—pulse small and weak, tongue black, countenance dusky. These symptoms occasioned me great anxiety, for I was utterly at a loss to account for them. The heart sounds were still normal, though much weaker. I ordered beef-tea and brandy in alternate doses every half-hour.

I saw her again at two o'clock, p.m., but there was no improvement; she seemed to be getting weaker and weaker.

I was sent for hurriedly, about 9½ o'clock, p.m., with a message that she was dying. On entering the room I found her propped up with pillows gasping for breath, her pulse scarcely perceptible, and her whole appearance betokening speedy dissolution. I was informed by the attendants that she had been neither able to speak nor swallow for the last half hour. I was on the point of giving up the case as hopeless when I observed that though she was gasping for breath there was not that peculiar catch at the chin in the effort which is always present in the dying.

It struck me on the instant that she might be choking from some mechanical obstruction, and at the apparently imminent risk of suffocating her, I introduced my finger into her throat, and, immediately that I passed it into the pharynx, I thought I felt a swelling pressing on that cavity; I proceeded at once to examine the neck outside, and at the external third of the clavicle, but above it, I discovered the cicatrix of a scrofulous abscess, which I now learned for the first time had been discharging, but had ceased a few days before her illness. There was a very small aperture in it, from which a drop of pus was exuding; I introduced a probe and finding it sink deeply towards the pharynx, I enlarged the opening and gave exit to a large quantity of flaky pus.

The relief was immediate; she was able to swallow some brandy at once, and after a few minutes to speak.

This explained the typhoid symptoms satisfactorily, and the rheumatic fever having run the usual course, terminated favourably, without any further occurrence deserving of notice.

Case II.—J. B., gentleman farmer, aged sixty, robust constitution, was attacked in May, 1866, by acute pneumonia, after a prolonged exposure to the rain at night. The lower lobes of both lungs were affected, but he went through the attack well, and was

convalescent about the fourteenth day. At that time both lungs yielded a clear sound on percusssion, the sputum was perfectly free from tinge, and the respiration was natural, mingled, however, with bronchitic râles; his pulse was 80, his appetite improving; he was taking bark and ammonia, with an occasional aperient and an expectorant. He now, however, began to find himself uncomfortable on his left side, and he consequently lay on his back; his countenance had an anxious expression, and was slightly flushed. He got no stronger. There were times, particularly after meals, when he was uneasy and restless, but after repeated examinations I could find nothing wrong with him, he occasionally had a rather violent fit of coughing, but the sputum was bronchitic. Counter irritation by sinapisms and by croton oil liniment was freely applied to the chest. This state of things continued from day to day without any alteration for a fortnight; he did not appear to be worse; he certainly was no better. I gave him an increased allowance of punch, increased the strength of his mixture by the addition of quinine; still day after day passed and there was no improvement. Not liking this prolonged convalescence, I called to my assistance two of the leading practitioners in my neighbourhood. They examined him carefully, but could offer no opinion as to the reason of his delay on the road to health, and they continued the same treatment, slightly increasing the allowance of punch.

This made no alteration whatever in his symptoms, and he went on the same way for six or seven days longer, when being seized with one of his fits of coughing it proved unusually violent and prolonged, and ended by the expectoration of a firm bit of inspissated mucus, about the thickness of a quill, surrounded by blood, as if it had been forced out of a tube in which it was imbedded by the violence of the cough. From that moment all his symptoms disappeared; he was up three days after, and he rapidly regained his health and strength.

Case III.—Jane Cahill, aged sixteen, domestic servant, complained of severe pain in the arm, awakening her at night; it gradually extended into the palm of the hand, and after persisting about an hour, the hand and arm began to perspire profusely, and the pain gradually ceased. The attack recurred again and again. The catamenia were absent. The arm was rubbed with compound iodine ointment, and menstruation established by suitable treatment, when the pain entirely disappeared.

Case IV.—T. N., aged forty-seven, gentleman, had suffered from delirium tremens twice, and still persisted in the habits which gave rise to the attack. His memory was greatly impaired, and his appearance altered for the worse—he was shrunken and old-looking, his hair turning to a greyish white. I saw him on June 2nd, 1866; he was then labouring under congestion of the lungs. The sputa consisted almost entirely of scarlet blood, a little mucus and some air bubbles being intermixed; râles all over the chest, which was still pretty clear on percussion. He was very low and weak. The congestion disappeared under the use of hot fomentations, turpentine stupes, &c., with moderate stimulants, liquid nourishment, and mild expectorants, and as the sputa became clear he grew excited; and finally, when the congestion disappeared, he presented a well-marked example of delirium tremens.

The delirium yielded after twenty-four hours to the use of opiate injections, and he awoke from a short sleep quite sensible, very low, and his lungs congested again. The same treatment was again adopted with precisely similar results.

Thus the phenomena of alternation between the congestion and delirium was repeated twice, when he gradually sunk, and died on the fourteenth day from the commencement of the attack.

Case V.—Master A. L., aged thirteen.

January 12th, 1866.—Saw him for the first time to-day. I was informed that he had been complaining since the previous day of soreness in his hip, which kept him in bed to-day. On examination I found there was tenderness on pressure over the joint, but no swelling, and the motions of the joint were unattended with pain. His pulse was 80, regular, but his tongue was rather foul, and his teeth and lips coated with brownish slime or pellicle. To have two grains each of calomel and antimonial powder to-night, followed in the morning by a tablespoonful of castor oil.

13th.—Passed a round worm, about eight inches long, this morning; complains less of hip, but has been awake and raving the whole night, wanting to get out of bed. His attendant says he slept some about three o'clock this morning, but as she herself admitted she dozed about that hour, I could not place much confidence in her statement. Pulse 120; tongue, browner and more coated, dry, and looking as if about to crack in the middle. His eyes are very bright, and though he spoke sensibly, but rather excitably, to me when I came in, and put out his tongue when

desired to do so, he began to rave away directly I stopped talking to him. I now found, on more particular inquiry, that he had been ill some days before I saw him, and though he was down on a sofa in the parlour, he was very often raving. His friends attributed his illness to his going out too soon after an attack of sore throat. He did not complain of headache. I also found that the night before I saw him he slept none—at least he was talking the whole time. Under these circumstances I ordered him a mixture containing tartar emetic, hyosciamus, and spirits of nitrous ether, to be taken every third hour.

I visited him at ten o'clock that night, and the moment I entered the house I heard him shouting up stairs. I found him more excited than before, continually wanting to get out of bed, and ordering about imaginary companions in a loud voice; still he put out his tongue when desired to do so, and denied any uneasy feeling in his head. He had had three doses of his mixture, and his attendants said it appeared to have made him worse. I now gave him fifteen drops of tincture of opium, and directed it to be repeated at three o'clock, a.m., his nurse saying it was about that time he was quietest.

14th.—Same state; no effect had been produced by the opium, and he was still talking incessantly. I now ordered him a draught containing a scruple of tincture of opium every three hours, had his hair cut off, and, as the belly was somewhat tympanitic, had a terebinthinate enema administered, which merely brought away some flatus.

I saw him again at eleven o'clock at night, and found him much worse. The opium had produced no effect; he was not talking so loud, but muttering rapidly, and he constantly groped about with his hands, and had a wild look. His pulse was weak and rapid, and a great degree of subsultus had set in which prevented me feeling it accurately. His teeth, tongue, and lips were black with sordes.

He was now without sleep, as far as I could ascertain, for more than seventy-two hours, and would not probably live more than four or five longer if unrelieved.

I determined, therefore, to try the effect of oil of turpentine, and I immediately administered a large teaspoonful, containing, I should say, about a drachm and a half made into punch, and directed it to be repeated every second hour, with a tablespoonful of port wine every half hour.

The first dose of turpentine seemed to make him rather excited; after the second he was quieter, and after the third he dropped asleep.

15th.—I found the subsultus gone, the pulse 120, regular, and the breathing quiet. He started occasionally, muttered some, but was evidently asleep all the while. I directed him to be occasionally roused and fed with chicken jelly.

He slept all that day, through the night, a good deal of the next day, the next night—taking his nourishment at intervals—and on the following morning he was free from fever.

He rapidly and completely recovered.

Case VI.—W. J., aged twenty. The subject of the present case was clerk in a mercantile office, and his previous history is as follows:—

About the 1st of August, 1866, he got a pain in the open of his right side, as he expresses it. He let this go on for two months, until it moved to the groin also; he then applied for advice, and, under the care of several practitioners, he was alternately leeched, blistered, and cupped, time after time, without the slightest relief until March, 1867. At this date a small lump appeared in the groin; it was painted with iodine, and about the beginning of April a small lump appeared under the hip-joint; this gradually enlarged, and as it did so the first disappeared. His health now began to fail: he was annoyed by a harrassing cough, night sweats, &c., and he appeared gradually sinking. The disease had been pronounced to be spinal.

He came under my care June 27th, 1867. The leg was drawn up, the thigh flexed, and the back stooped, while an enormous abscess occupied all the gluteal region on the right side, stretching down the thigh, on its anterior and lateral aspect, to within about three inches of the patella. After a careful examination of the tumour, I came to the conclusion that it was not connected with the spine. On examining the chest I found the lungs perfectly healthy—the cough was merely a cough of irritation, and yielded at once to a pectoral mixture containing hydrocyanic acid. I then put him on large doses of infusion of bark, with chlorate of potash and syrup of iodide of iron, and under this treatment his health rapidly improved. As soon as I thought him fit to bear the drain which would necessarily result from the opening of so large an abscess (it measured thirteen inches by ten), I introduced a trochar

and canula right through it, and put in Chassignac's drainage tube. An immense quantity of pus, laudable enough and without smell, came away for the next few weeks; and on the 7th November, two months from the day it was opened, the discharge was so trifling, not amounting to more than a teaspoonful in the twenty-four hours, that the tube was withdrawn and the leg bandaged. He now began to walk about, gaining flesh and strength every day, until the 13th of December, when he was suddenly attacked with obstinate vomiting, quick pulse, and perspirations. On examining the thigh I found some matter had burrowed down between the muscles on its external aspect. I introduced a trochar through the lower hole, which remained open since the former operation, and following the sinus down, brought it out at the lowest point possible, reintroduced the tube, and gave exit to a large quantity of sanious pus. The vomiting stopped the next day, and the bark, iodide of iron, &c., was at once resumed. About the middle of February the tube was removed, and by the end of March the abscess was healed through its whole extent. He then began to walk about, getting fatter and fatter every day. He continued the iron and bark, and he is now (more than a year having elapsed) quite well; all stiffness being removed and the motions of the joint entirely unimpaired. He has adopted a more active life, and has passed the last few months directing and superintending farming operations. He is fatter than he ever was before.

Case VII.—Miss A. B., aged thirty-six, unmarried, a teacher of languages; she came under my care in the earlier part of last year; I found her suffering from an attack of acute abdominal pain, with a rapid pulse, flushed face, and some tenderness, but evidently of a hysterical character, as it was much less when her attention was otherwise engaged. The attack yielded promptly to draughts containing half a drachm each of chlorodyne, sulphuric ether, and compound spirits of ammonia.

On visiting her next day, I learned she had been confined to her room for the past eight years, and for the most part of that time to her bed. She had been treated by various medical men, but had received no benefit. After a careful examination, I came to the conclusion that all her organs were healthy. Her appetite was pretty fair; and she was very well nourished for one so confined. She complained of weakness in her limbs and back, and some slight leucorrhea. There were various foods which she averred she

could not digest, and others much more indigestible she assimilated with ease.

I commenced with a careful course of valerianates, both of iron and quinine, with an occasional bitter infusion; regulating the bowels with aloes and assafœtida, with small doses (one-thirtieth of a grain) of strychnia and croton oil, as they were occasionally very obstinate. I encouraged her, meantime, to hope for a speedy and favourable issue to the treatment, carefully attending to all her accounts of local pain; applying belladonna and opium plasters when the uneasiness was referred to the chest or back, and hot stupes when the abdomen was affected. Under this treatment she was up in a month; and in three from the time of commencing the treatment, she walked five Irish miles, somewhat to the surprise of her friends, who had been expecting her death for months.

She has since (nine months ago) remained perfectly well, and has resumed her profession as a teacher.

I have since met with a similar case, which promises to turn out as favourably.

Case VIII.—This is the case of an infant whom I had occasion to operate on for the removal of a deformity, occasioned by the almost total absence of the upper lip; the left ala of the nose being incorporated with the cheek, and the sutures having given way, I was obliged to extemporize a cheek compressor. I managed it by breaking off two small trusses in the middle, and tying firmly the broken ends together. I placed a pad on either cheek, tied the perineal bands behind the head to prevent it slipping forward, and brought the straps across beneath the chin. Thus adapted it suited very well, and procured a successful result to the operation.

Before I conclude I wish to mention, in reference to a form of dyspepsia very common in dispensary practice in Ireland, usually called potato stomach—characterized by pyrosis, often profuse, and considerable pain—that I have found, after many trials of various medicines, that a powder composed of one grain of quinine, three grains each of soda and compound kino powder, and eight grains of bismuth, taken three times a day, will usually produce a speedy and effectual cure—a mild aperient being generally necessary every second night during their administration.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF THE EYE.

1. *Treatise on the Diseases of the Eye; including the Anatomy of the Organ.* By Carl Stellwag von Carion, M.D., Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the Third German Edition, and edited by Charles E. Hackley, M.D., Surgeon to the New York Eye and Ear Infirmary, Physician to the New York Hospital, Fellow of the Academy of Medicine, &c.; and D. B. St. John Roosa, M.D., Clinical Professor of the Diseases of the Eye and Ear, in the Medical Department of the University of the City of New York, &c. With an Appendix by the Editors. Illustrated by ninety-six wood engravings and eighteen cromo-lithographs. London: Robert Hardwicke, 192, Piccadilly. 1868. 8vo, pp. 774.

2. *A Manual of the Diseases of the Eye.* By C. Macnamara, Surgeon to the Calcutta Ophthalmic Hospital, Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College. London: John Churchill and Sons, New Burlington-street. 1868. Pp. 571.

3. *A Treatise on the Diseases of the Eye.* By J. Soelberg Wells, Professor of Ophthalmology in King's College, London; Ophthalmic Surgeon to King's College Hospital; and Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfields. London: John Churchill and Sons, New Burlington-street. 1869. 8vo, pp. 741.

4. *An Improved Method of Extraction of Cataract, with Results of 107 Operations.* By J. R. Wolfe, M.D., F.R.C.S.E.; Ophthalmic Surgeon in the Aberdeen Royal Infirmary, and the

Aberdeen Eye Institution; Lecturer on Ophthalmic Surgery in the Aberdeen Medical School. With Illustrations. London: John Churchill and Sons. 1868. Pp. 71.

5. *The Theory of Ocular Defects and of Spectacles.* Translated from the German of Dr. HERMANN SCHEFFLER, by ROBERT BRUDENELL CARTER, F.R.C.S. (Exam.); Fellow of the Royal Medical and Chirurgical Society; Consulting Surgeon to the Gloucestershire Eye Institution. With Prefatory Notes, and a Chapter of Practical Instructions. Pp. 262. London: Longmans, Green & Co. 1869.

THE almost simultaneous publication of such works as those above enumerated, shows the very great interest taken at present in ophthalmic medicine, and the works themselves confirm the truth of what we have more than once remarked concerning the great progress made of late years in ophthalmology. We have from time to time noted and commented upon the advances and discoveries which have been recently made in this branch of medicine, and we would now again invite our readers' attention to the subject, which has especial interests for the Irish practitioner who has to deal daily with affections of the eye. And in mentioning Ireland, we are struck with the curious and surprising fact that there is no professorial chair of ophthalmology in that country. We cannot but regard this as an anomaly, more particularly when we consider the great prevalence of eye diseases and the fact that in no other country save Norway is the proportionate number of blind so large as in Ireland. While nearly every foreign university and some at least of the English and Scotch Universities and all the principal medical foundations in England have their acknowledged professor of ophthalmology, Ireland does not possess in any of its schools even a lecturership on the subject. Neither the state, the universities, nor other corporate bodies in this country have as yet followed the example of liberal and thorough education set them by the foreign universities. Private enterprise and philanthropy have effected much, but we consider that something more than private efforts are necessary to spread abroad a knowledge of eye diseases in such a country as Ireland, where ophthalmia in its various forms is both epidemic and endemic and a real scourge. In the preface to his manual Professor Macnamara says, "The Senate of the Calcutta University wisely insists on students coming up for examination, not only producing certificates of having attended an

Ophthalmic Hospital and lectures on the subject, but that each shall pass a clinical as well as a written examination. The student has therefore to satisfy the examiner as to his ability to diagnose various diseases, and prescribe for one or more patients brought before him; and as these cases are chosen promiscuously from among persons attending the hospital, the test entails a practical acquaintance with the principles of ophthalmology."

Stellwag's book has become the standard work and text book not only of the Germans but of the German-understanding practitioner all over the world, being rivalled only by Wecker's *Études Ophthalmologiques.* There is however a large number of medical men to whom the German edition is a sealed book, and there are few amongst us who do not prefer our own to a foreign language. We are therefore under a debt of obligation to Drs. Hackley and St. John Roosa, for having in the present edition placed this work within the reach of all English-speaking practitioners. While acknowledging our indebtedness to the translators for their meritorious efforts and before considering the contents of the work we would point out the two circumstances which we would principally take exception to;—these are the quality of the translation, and the fact of the work being merely a translation; matters perhaps of minor importance and of mere opinion. One of the merits of the work is undoubtedly that of being an almost literal translation, but then the style of its diction and composition, its expressions and idioms are sometimes so German and so unlike our own habits of thought and our accustomed language that its perusal will be rendered unpleasant to the non-German scholar; the mental effort which should be concentrated on seizing and retaining the author's views and opinions is occasionally diverted from its legitimate objects by the peculiarity of language. Knowing as we do the peculiar style and phraseology of the original we are fully alive to the difficulties which the translators must have encountered in their arduous undertaking of rendering into fluent English the long and involved sentences and compound words of the author, and we must make due allowance for the occasional technical peculiarities of the translation, more especially as the sense and meaning of the original have been truthfully retained. Remembering with feelings of pleasure and gratitude Hay's American Edition of Lawrence and Warlomont and Testelin's French edition of Mackenzie we had anticipated in the American edition of Stellwag, a somewhat similar annotated work; but in

this we have allowed ourselves to be disappointed, the work is very little more than a simple translation, nor do the editors themselves claim much more for it. The additions consist of a few short isolated notes respecting American authorities and an appendix comprising five pages of translated extracts and some woodcuts from Zander together with a set of Jaeger's test-types, inferior, we believe, in scientific accuracy, to Snellen's. The work though styled an American edition, by Stellwag, is published in London. Beyond the few scanty references to British authorities contained in the German work there is no allusion to British labours and British writings in the American edition, and such references would not only be courteous and graceful in a work destined to a certain extent for the profession in these countries but are in some instances absolutely called for and necessary. Many examples might be mentioned, but we will adduce only one and take it in particular as it relates more especially to the Irish School of Medicine. At p. 437 we find the heading *Basedow's Disease*, and as in the consideration of that disease there is no allusion to any but to continental labours if we except the French edition of Mackenzie, mentioned in the enumeration of *authorities* at the end of the chapter, the student and others might naturally be led to infer that the British schools had no claim to allusion. Now what is Basedow's disease? Although an affection which comes more within the province of the physician than of the oculist we venture to assert that few of our practitioners will recognize under that title the well-known *Graves' Triple Disease.* Practically it is of little moment by what name we designate a disease so long as we understand the nature of that disease and that the name conveys with it certain ideas, but there are other considerations which make it incumbent upon us to associate in medical nomenclature certain names with certain diseases, accidents or discoveries, and to retain that association unless good cause can be shown for the severance. In the present instance we claim to retain Graves' name in association with this cardio-thyroid exophthalmus, or exophthalmic goitre on the grounds of priority; Graves described it in his *Lectures* in 1835; Basedow's article did not appear until 1840; Dr. Stokes in his masterly and philosophic work on the *Heart and Aorta* gives the credit of its first true description and recognition to Graves. It is an interesting fact that some of the earliest as well as the most recent writings on this subject appeared in the pages of this journal, and that one of the first *post mortem* examinations ever made on a subject affected

with this malady was communicated to the Dublin Pathological Society by the late Sir Henry Marsh in 1841, and subsequently published in this Journal. Both Macnamara and Wells style the disease after Graves. The technical shortcomings we have just alluded to do not however detract from the very great merit of the work itself, which is a most learned and scholarly treatise; it is especially valuable in bringing before us the doctrines and practices of the present-day German ophthalmic schools of which Stellwag is one of the acknowledged leaders. In the pages of this work will be found a rich mine of pathological information which is surpassed in none and equalled in few similar works. The work is well illustrated; many of its woodcuts as well as much of its matter will be already familiar to the reader as they have been largely copied by various authors. In the following pages we propose to consider the three works at the head of our list both collectively and individually.

Stellwag's introductory chapter is one of the most interesting and practical in the work; it contains general directions and observations on the treatment of eye diseases, on the means employed and the manner of employing those means; in discussing antiphlogistic remedies and the use of mercury he advocates the inunction treatment; so likewise does Wells, and Macnamara who, as we shall see, is rather an opponent of mercury, recommends the mineral to be used by means of the vapour bath. We would hesitate however in following Stellwag's practice in the administration of corrosive sublimate; he orders two grains of this mineral to be made into thirty-two pills and says "one pill is to be taken night and morning on an empty stomach; and every two to three days increase the dose, until half a grain has been reached, and again the dose is to be diminished at intervals of two days." We should expect half a grain of corrosive sublimate in an *empty* stomach would produce very unpleasant effects. In treating of *Narcotics*, Stellwag says:—

"Recently, hypodermic injections have been very much used, and indeed this method has much to recommend it above the others. We are more certain that the remedy has been taken up, and its effects appear quicker and are more permanent and complete, then when it is used internally. The effects are often seen within a half a minute. This method is particularly to be recommended in accidents which threaten loss of life, poisoning, &c., the constitutional effect appearing in the shortest time. But undoubtedly local effects are also secured by the hypodermic

injection of narcotics, and with this an especial curative action, as observations in reflex spasms prove, where we can most accurately determine as to the seat of pressure. These injections are best made by means of Luer's improved syringe, or Prava's. The most appropriate point for the injection, when we wish a constitutional effect, or when we desire to subdue pain in the orbital region, is the centre of the temple. In other forms of neuralgia, and in reflex spasm, the seat of pain or the predominent seat of pressure should be chosen for the injection. We should pinch up a fold of integument, lifting it up well, but releasing it after the entrance of the point of the needle. If this be not done, the fluid will run out. For an anæsthetic effect, a solution of one of the salts of morphia is used, four grains to the drachm. The syringe is filled with this, and the fluid injected until the mark 7—9 on the handle is reached, when about 1-6 or 1-5 of the alkaloid has been injected. The solution should be perfectly clear and neutral. The primary excitement after the hypodermic injection of morphia is apt to be much more severe than on the internal use. Nausea and vomiting occur more readily, which is a point to be considered; still this reaction quickly passes away. This treatment is particularly to be recommended after injuries and operations, when we wish to alleviate severe pain in neuralgia also, without eye disease and in reflex convulsions." (*Graefe.*)

"The local reaction caused by the wound itself is almost always extremely slight, if the point of the instrument be sharp enough, and it be used with care. In no case is there any danger to be apprehended from the wound, and from the entrance of the fluid into the sub-cutaneous cellular tissue. Sometimes, however, fortunately in very rare cases, the point of the instrument enters a sub-cutaneous vein, and thus the solution is injected directly into the blood. The symptoms are then very alarming, and they appear with the rapidity of lightning. They are a severe burning and cutting sensation over the entire skin, a strong acid taste on the tongue, a dark reddening of the face, tinnitus aurium, flashes of light, and very severe pain in the scalp. Added to these symptoms, there is an extremely powerful and rapid movement of the heart, and in some patients loss of consciousness and convulsions. These symptoms last for some minutes; but in all cases which have as yet been observed, they pass away without harm.

"This accident indicates an important rule, which is, to inject very slowly, and on the appearance of the symptoms in question to stop immediately, and draw the fluid back into the syringe. The reaction appearing with such lightning-like rapidity, this may be easily done. When there is any danger of apoplexy, from a morbid condition of the vessels, venesection should be performed as quickly as possible." (*Nussbaum.*)

Both Wells and Macnamara speak highly of this subcutaneous

injection of morphia, and we ourselves can from practical experience speak of its beneficial effects.

Much misunderstanding and discussion have of late years arisen respecting the name and nature of *trachoma;* this term was employed principally by what we may style the Prague School to denote exclusively that conjunctival affection in which a peculiar neoplastic growth resembling fish or frog spawn or boiled sago or tapioca grains makes its appearance in certain parts of the conjunctiva. These trachomatous bodies are carefully to be distinguished from the papillæ which are normal anatomical structures of the conjunctiva and which in certain conditions of that membrane become enlarged and receive the name *granulations.* This fine distinction gave rise to a good deal of confusion, and we have seen in Germany the same state of parts termed by one teacher trachoma and by another granulation. This confusion as might be expected has grown worse confounded in the minds and utterances of the pupils attending the various cliniques. Stellwag has a long and exhaustive treatise on the subject and uses the two terms trachoma and granular conjunctivitis synonymously; he divides this form of disease into—1, pure granular; 2, papillary; 3, mixed; and 4, diffused conjunctivitis. We consider this classification a very simple and practical one and would desire to see it adopted; we think also it would be well to follow his nomenclature, and when in the following pages we use the term trachoma we use it synonymously with granular conjunctivitis; in writing or speaking however it would be well to specify the variety of the disease. Stellwag's first variety comprises the frog spawn-like neoplasms only or as they are called by Arlt, Pilz and others true trachoma; his second is confined to the papillary region of the conjunctiva and consists in a proliferation of the papillæ; his third is a mixture of these two and is the common form met with; the diffused variety is described as "a higher grade of development than the mixed trachoma, and is distinguished by the amount of neoplastic formation in and upon the conjunctiva, as well as by the ordinary participation of the cartilage, of the integument, and the cornea." Both Stellwag and Wells enumerate amongst the causes of granular conjunctivitis the long-continued use of atropine; though the latter author says he has "met with some striking examples of this;" we ourselves are sceptical on the matter. Macnamara seems also to entertain some doubt on the subject as appears from the following:—

"It is a remarkable fact, that a prolonged application of atropine to the surface of the conjuctiva appears to give rise to granular conjunctivitis; at any rate, one sees this form of disease arising after the long-continued instillation of atropine. Unless, however, it were positively ascertained, that the neoplastic growths peculiar to this affection had no existence prior to the instillation of the alkaloid, I should not be disposed to admit the connexion of cause and effect. Many of these patients have been placed under conditions exceedingly favourable for the development of granular conjunctivitis, having probably taken no inconsiderable amount of mercury for the cure of iritis, and having at the same time been reduced by antiphlogistic measures, adopted to control the inflammation. Before, therefore, ascribing to atropine any peculiar property of developing granular conjunctivitis, I should like to watch its effects on a perfectly healthy eye; it may only act as an irritant, developing a pre-existing form of disease."

Wells' chapter on diseases of the conjunctiva is interesting and like the rest of his work practical; he ignores the term trachoma, but insists on the name *granular lids* or *granulations* being applied only to the fish-spawn-like neoplastic formations—the granular trachoma of Stellwag. The following remarks from Wells are well worthy our careful attention:—

"Before proceeding to the consideration of granular ophthalmia, I must call especial attention to a peculiar vesicular condition of the conjunctiva, which is frequently premonitory of that affection. It is a matter of surprise that this condition, which has been so carefully and elaborately described by several eminent continental writers, more especially Stromeyer, Bendz, and Warlomont, should have apparently altogether escaped the attention of many English ophthalmic surgeons; indeed, we are principally indebted to two distinguished English military surgeons for giving this subject due prominence in our medical literature, and calling the attention of the profession, and more especially of army medical men, to a condition of the eye which is very important to all who have the charge of large bodies of men, *e.g.*, soldiers, paupers, convicts, &c.

"This vesicular condition of the conjunctiva is distinguished by the following symptoms:—On everting the lower eyelid, we notice upon it small, round, transparent bodies like little sago grains or herpetic vesicles, which are situated directly below the epithelium. They mostly make their appearance first on the lower eyelid, and may, indeed, remain confined to it, but they generally extend to the upper eyelid, and I have seen a few rare instances in which they encroached considerably upon

the ocular conjunctiva. The vesicles are sometimes isolated and but few in number, being sparsely scattered about the conjunctiva especially near the outer angle of the eye. In other cases they are studded thickly over the palpebral conjunctiva and retro-tarsal fold. They cannot be emptied of their contents by pricking, and differ in this from the sudamina of herpes, and the serous elevation of the epithelium of the conjunctiva, which is occasionally met with in catarrhal ophthalmia; moreover, in the latter condition the vesicles are much larger. The vesicles consist of a stroma of connective tissue containing nucleated cells like lymph corpuscles with a little fluid. They are surrounded by a delicate layer of condensed connective tissue, which has no proper enveloping membrane, but passes over into the neighbouring less condensed tissue. With a fine needle we may often succeed in removing them entire. They seem to be identical in structure with the closed follicles of the intestines, &c. Sometimes these vesicles appear without any change in the conjunctiva. Generally, however, there is an increased vascularity of this membrane with some swelling, more especially at the retro-tarsal fold. The vessels of the conjunctiva are very apparent, and often of a dusky bluish-red colour, sending small branches towards the vesicles, which may appear arranged in rows like little transparent beads. But this hyperemic condition may sometimes mask the presence of the vesicles, especially if they are small and not very numerous, so that they might readily be overlooked by a superficial observer. If the conjunctiva is however examined through a magnifying glass, they will be easily distinguished.

"If the hyperæmia of the conjunctiva is but slight, these vesicles may exist for a very long time, for months or years, without producing any sensible discomfort or symptoms of inflammation. The patient may either be quite unaware that there is anything the matter with his eyes, or he may only notice a slight sensation of pricking or itching in the eye, the lashes being somewhat glued together in the morning. There may also be a tendency to irritability of the eyes during reading and writing, more especially by artificial light. Sometimes, however, even these symptoms are entirely absent.

"This vesicular condition of the conjunctiva is due to an enlargement of the closed lymphatic follicles of Krause, which are situated directly beneath the epithelium, and which are not apparent in a normal state of the conjunctiva, but become swollen and enlarged when this membrane is in an irritable condition. Stromeyer called special attention to these vesicular granulations, but supposed that they were pathological products and did not exist in a healthy conjunctiva. The researches of Krause and Dr. Schmidt of Berlin have, however, distinctly proved that they are physiological organs, which are not apparent to the naked eye whilst the conjunctiva is in a normal condition, but are apt to become enlarged into these sago grain vesicles from a proliferation of their contents, more

especially of their connective tissue elements, when there is any chronic irritation of the conjunctiva.

"Now it is a very important question, and one which has not at present received a decided and satisfactory answer, whether the true granulations are developed from these vesicular bodies, or rather the follicles of Krause, or whether they are a distinct neo-plastic formation, due to a proliferation of the contents of the connective tissue cells of the conjunctiva. The former view is maintained by several observers of eminence, more especially Bendz and Stromeyer. But one weighty argument against this view is furnished by the fact that true granulations sometimes occur in situations where these follicles are more or less completely wanting, as for instance on the ocular conjunctiva. Wecker strongly advocates the view that the true granulations are neo-plastic formations, akin to tubercle, and are due to a proliferation of the contents of the connective tissue cells, and that they consist of a mass of closely packed nuclei with little or no connective tissue between them. At a later stage the connective tissue becomes increased in quantity, and forms a semi-transparent, gelatinous, grumous mass containing a small quantity of fat. The nuclei diminish in number, and are finally only sparsely scattered amongst the connective tissue. It is an important fact that this gelatinous mass becomes transformed at a later stage into a dense fibrillar tissue, and that the latter shows a great tendency to contraction, thus causing more or less destruction of the true conjunctival tissue. A firm cicatricial tissue is formed, which gives a streaky tendinous appearance to the inner surface of the lids; the latter gradually become shortened, the retro-tarsal fold almost obliterated, the tarsal cartilages incurved, thus giving rise to trichiasis and entropion. . . . . .

"But whether we accept or not the theory that vesicular granulations are the first symptoms of granular ophthalmia, and may become developed into true granulations, there cannot be the slightest doubt that they must be regarded as a strongly predisposing cause of the latter. It is, therefore, of great importance that their existence should be detected as early as possible, more especially where a large number of persons are collected together, as in barracks, workhouses, and schools. For this vesicular state of the conjunctiva must be watched with care and anxiety, as it chiefly occurs in individuals living in a confined and vitiated atmosphere, and under faulty sanitary arrangements. Proper hygienic measures should, therefore, be at once adopted, and the patients, if necessary, submitted to treatment; for if these vesicular granulations be allowed to exist unchecked, and such eyes are exposed to the usual irritating influences met with in marches and encampments, as for instance exposure to wind, dust, draughts of cold air or bright glaring sunlight, an epidemic of granular ophthalmia is but too likely to break out, the ravages and extent of which cannot be foretold. . . . . .

"It is, therefore, of much importance to discover the presence of vesicular granulations as early as possible, in order that the hygienic conditions of the ward or sleeping apartment of the patient may be thoroughly examined. Such patients should be placed in large, airy, well ventilated rooms, which are not exposed to the bright sunlight. Strict orders should also be given that the same sponges, towels, or waters are not used for others. Indeed, it is advisable that even healthy persons should always wash in fresh water. It is better to separate those affected with vesicular granulations from the healthy, for I think that there can be little doubt that vesicular granulations are contagious, more especially when they are accompanied by conjunctival swelling, and a little muco-purulent discharge."

The contagious character of granular conjunctivitis should never be lost sight of. So decided is Liebreich's views as to its contagious nature and such a dread has he of infection that he has separate hours and days for its treatment, and we have seen him hurriedly separate and dismiss a trachomatous person from amongst his other patients the moment he discovered the malady. Stellwag says:—

"Contagion plays the most important part. The number of cases caused in this way is at any rate in excess, especially in places in which a great number of persons live together, and come in contact, or use the same washing materials, as is apt to be the case in barracks, workhouses, hotels of the lower class, &c., [asylums, schools, and even hospitals.] If in such places a number of persons once become affected with trachoma, and if these are not carefully separated from the healthy ones, the number of those affected increases very rapidly. Thus contagion becomes an important factor in the development and extension of certain endemics and epidemics, which have become a permanent plague. In the same way may be explained, by the contagious property of trachoma, the examples of the disppearance of the disease from the place where it originated, to appear in branches of the family or in entire households who were in places completely free from the disease, and who were not exposed to the noxious influences which first excited trachoma.

"The purulent and muco-purulent secretion of a trachomatous conjunctiva must alone be considered as the bearer of the contagion. The watery secretion of the pure granular trachoma, as well as the turbid mucous product of ancient papillary, mixed, and diffuse trachoma, which contains no pus-elements, is scarcely contagious, or only very slightly so.

"The destructive power of the conjunctival secretion is the greater in proportion to its resemblance to pus, and the severity of the inflammation."

Wells states that—

"Defective hygiene and contagion are also the chief causes of chronic granulations. The muco-purulent discharge is very contagious, and may re-produce a similar affection, or it may cause catarrhal, purulent, or even diphtheritic ophthalmia, just as, conversely, these diseases may produce granular lids.

"It is probable that, as in purulent ophthalmia, the disease may also be propagated by the air, more especially if it is accompanied by severe purulent discharge, and the cases are crowded together in small, close, ill-ventilated rooms. The disease may occur epidemically and endemically. It spreads rapidly among the inhabitants of closely-crowded dwellings, such as barracks and workhouses. It is very prevalent amongst certain nationalities, where the people are crowded together for a length of time in small dirty cabins, filled, perhaps, with smoke and ammoniacal exhalations. Thus it is very common amongst the poorer Irish, and also amongst the Russian peasants (Wecker)."

The disease is also called *Military Ophthalmia*, and the following are some of the conclusions arrived at by M. Warlomont from an analysis of the lengthy discussion on the subject by the Royal Medical Academy of Belgium, and which we extract from Macnamara's work:—

"I. Military Ophthalmia, also called contagious ophthalmia, granulous ophthalmia, &c., is an affection essentially transmissible, and subject to easy and frequent relapses. Those who have been affected by it are never sure of a perfect cure.

"II. If it be true, as some state, that it can arise spontaneously in civil populations, it is as surely established, on the other hand, that in all the countries of Europe, where its presence has been assured, it has always commenced in the army, and spread itself from them among other classes of the population.

"III. In Belgium, especially, it has been proved that before 1834 it affected the army almost exclusively. It was only after this period, and dating from the disbanding of those affected by granulations, and their return to their homes—a measure ordered by the Minister of War, on the proposition of the Sanitary Inspector-General of the Army, and sanctioned by the Commission of Inquiry and by Professor Jünken of Berlin—that its extension began among the civil population.

"IV. The isolation of individuals affected with military ophthalmia in all its stages is imperatively demanded by the contagious character of the affection. Beyond this prophylatic measure, it is not possible to retard or extirpate the disease. To send back affected patients to their homes is, therefore, a dangerous and irrational proceeding."

We cannot be too particular in impressing upon trachomatous patients and their friends or attendants the contagious nature of the malady, nor can the surgeon himself be too careful in guarding against carrying the contagion either to himself or to his patients. We have known instances of both. Especially in workhouses and in dispensaries the medical attendant should thoroughly cleanse his fingers and appliances after the inspection and treatment of a trachomatous patient. Other important matters forbid our entering at length into the treatment of granular conjunctivitis. We may mention that the various highly extolled remedies are either omitted by Stellwag or alluded to only disparagingly; thus sugar of lead, tannic acid, tincture of opium, dilute nitric acid, &c., are stated to be far inferior in their effects to nitrate of silver and sulphate of copper; he says, "the scissors, nitrate of silver, and sulphate of copper are the direct means of treatment of trachomatous neo-plastic formations," and dwells strongly upon the isolation of the affected.

Wells deprecates the use of strong solutions of nitrate of silver and lays stress upon the fact that the object of cauterization should not be to destroy the granulations chemically, whereby the conjunctiva would be very seriously injured and its functions impaired, but to excite and maintain such a degree of inflammation as will facilitate the absorption of the granulations. Macnamara's chapter is also sound and trustworthy, but there is one part of his practice which seems, to say the least, energetic; when the inflammation is more than adequate to produce absorption of the granulations, and

"That it is endangering the vitality of the cornea, we must at once control its action by means of nitrate of silver and cold compresses. In the first instance, a five-grain solution of nitrate of silver should be dropped into the eye every second hour, and cold compresses constantly applied over the lids in the interval; it may be well at the same time to administer a purgative, and if the patient is in pain, a grain of opium should be given three times a day. Should the disease, in spite of this treatment, gain ground, we must increase the quantity of opium to two grains three times a day, and having placed the patient under the influence of chloroform, smear the chemosed conjunctiva over with the dilute caustic pencil. Let it be distinctly understood, however, that this treatment will only be necessary when the cornea is in danger, but that it is then probably the sole means upon which we can depend for the preservation of the eye."

Two grains of opium three times a day would, we think be

inadvisable in ophthalmic practice in this country; it would no doubt enable us to apply the five-grain solution every second hour, for the patient would be insensible to the consequent pain.

The treatment of Trichiasis and Entropion have given rise to a great deal of discussion, and to several new operations of late years. Two of the principal operations for the removal of these conditions have been described in the early numbers of this journal by Sir Philip Crampton and by Sir William Wilde. The latter removes the entire ciliæ with their hair bulbs and this is we believe to be the only radical and effectual cure for the disease. We are glad to find so eminent an authority as Stellwag taking the same view; he says:—"In order. to give a proper direction to the ciliæ, but not to destroy them, a great number of operations have been suggested. All of them, however, accomplish their purpose imperfectly." After describing the transplantation operations, he says, "the removal of the hair-follicles is certainly the most trustworthy method. It is also simpler and more easily done." We have for some time past practised a modification of Sir William Wilde's operation, which consists in removing, instead of transplanting, the flap formed in Arlt's operation, the only advantage over Wilde's operation is that the patient is in the recumbent position. This operation we now find described in Stellwag. Wells has devised an operation which is a combination of Arlt's and Streatfeild's, and by which he has he says "succeeded in curing severe cases of entropion with marked contraction and incurvation of the cartilage."

Stellwag's section on *Tumours* possesses very great interest, especially for the pathologist. The classification is the same as that adopted by Virchow. Based on their anatomical origin he describes three principal groups of tumors in and around the eye: "The first class comprises tumors composed of blood, or materials coming directly from the blood, contained in natural or mechanically formed spaces, such as *extravasations*, *transudation* and *exudation* tumors. The second class comprises tumors due to collections of secretions proper, in existing cavities, such as *retention* and *dilatation* tumors. The third class represents growths, the true new formations or pseudoplasms, which grow immediately from the structure of the organs, originating in actual formative processes, or a true proliferation of tissue. (Virchow.)" To these a fourth class is added, which includes tumors caused by *hydatids*. The seat and mode of origin of these tumors, their microscopical

characters, pathology, symptoms, and treatment, are dealt with in a masterly manner, and we can refer our readers to this, as well as other portions of the work, with the confidence and certainty that they will be amply rewarded.

(*To be continued.*)

On Pyemia or Suppurative Fever; being the Astley Cooper Prize Essay for 1868. By Peter Murray Braidwood, M.D., L.R.C.S., Edinburgh; late President of the Royal Medical Society of Edinburgh. London: John Churchill. 1868. Pp. 287.

This is an exhaustive work on the subject of which it treats. The author commences with an historical review of the subject which shows great research and which is done with scrupulous care. He next discusses the nomenclature of the affection, which is found to be as varied as the theories which have existed as to its causes. Dr. Braidwood prefers the designation "suppurative fever" to pyemia. We admit the soundness of his objection to the name pyemia as a term connected with a theoretical origin of the complaint now considered to be incorrect. Suppurative fever is, however, a title already given, or at least very generally assigned, to a condition quite unlike that to which Dr. Braidwood would now apply it. From this much confusion will inevitably arise; and this is a matter to be regretted, inasmuch as a good deal of attention has been recently bestowed by scientific surgeons on the varieties of fever accompanying inflammation, suppuration, and wounds, and it is in the highest degree desirable that these forms of febrile disturbance, when they do really present distinct features should be discriminated from each other by distinctive appellations.

Purulent fever would, we venture to suggest, have been a happier term for a disease in which fever with development of pus in various parts and organs are the most salient symptoms. Sir J. Simpson's appellation of surgical fever, is a generic term embracing within it primary traumatic fever, inflammatory fever, fever such as often accompanies large yet comparatively healthy suppurating wounds, as well as the malignant variety of fever (pyemia or suppurative fever) to the study of which the pages of Dr. Braidwood's work is devoted.

The following definition of pyemia or suppurative fever is most

graphic; it shows the author to have great power of truthful delineation; we may quote it as a sample of his style, which is at once clear, terse, and vigorous, as it is true to nature:—

"Pyemia may be defined to be a fever which, attacking persons of all ages, is generally sequent on wounds, acute inflammation of bone, the puerperal state, surgical operations or other sources of purulent formation, and septic infection. It appears sometimes to prevail in an epidemic form. No one cause has as yet been found to produce this disease. The presence of pus is not necessary for its occurrence.

"The injection of putrid fluids as also of chyme and other healthy fluids, induces in animals symptoms like those of suppurative fever, and pathological appearances in the viscera similar to those met with in the early stages of this disease. The symptoms most pathognomonic of suppurative fever are, a more or less sudden invasion on the 4th or 5th day after an operation, marked generally by rigors or by depression of spirits and great anxiety followed by profuse perspirations; the pulse is generally rapid; the tongue is furred, then loaded, and by and bye, brown and dry; the skin assumes a dusky, sallow, and then a somewhat icteric tinge; there is very great prostration and emaciation, one or more of the joints swell, become red and painful, and may even suppurate; the breath has a heavy sweetish, or purulent odour; and there is laboured respiration, delirium, or other symptoms indicative of other organs being chiefly involved. This fever has no fixed duration, but it exhibits certain stages, and generally abates or becomes intensified on the 7th, 8th, 15th, 21st, 22nd, or 28th days, dating from the first rigor or other initiatory symptom.

"It is characterized by the formation of secondary abscesses in the internal organs (most frequently in the lungs, liver, kidneys, spleen and brain), and also in the joints and cellular tissue.

"I have designated pyemia a fever, because it seems to me that regarding its origin, symptoms, progress, and pathology, this disease is more nearly allied to the class of febrile affections than to any other group of diseases with which we are acquainted. This view is further confirmed by the only treatment which has as yet been followed by success. A liberal and properly regulated use of stimulants, and of nourishing diet has alone been found efficacious in averting that serious issue, which has hitherto compelled surgeons to view a rigor after operation as a death signal."

Dr. Braidwood devotes one long chapter to the narration of cases; these, twenty in number, are given with great accuracy of detail, and will well repay careful perusal by those interested in this important subject. The portion of the work, however, which we have

studied with the most profit and satisfaction, is the chapter relating to the etiology of the disease. In this chapter the predisposing causes are first discussed, then the causes which have been supposed by various authors to be the exciting causes of pyemic fever. As to its spontaneous or contagious origin, Dr. Braidwood asks is pyemia or suppurative fever contagious ? That is, is it communicable by media? Such means of propagation are manifold, yet he thinks there is no proof that they spread the disease.

Patients during labour, remarks Sir J. Y. Simpson, have been and may be inoculated with a materies morbi capable of exciting puerperal fever, and which is transferable by the fingers of the attendant acting like the ivory points of the old vaccinators. To prove this statement he quotes the interesting fact that, while prior to 1846 the mortality of puerperal cases in the great hospital at Vienna was one in ten, subsequently to 1848, it fell to one in seventy-four. This was owing to the regulation made in 1847, by Dr. Semelweiss requiring students to abstain from touching parts at the autopsies, and obliging them to wash their hands in a solution of chlorine before and after every vaginal examination.

While admitting that this goes far to corroborate the supposition that puerperal fever is inoculable, and in this sense contagious, Dr. Braidwood nevertheless concludes that " as far as our knowledge at present warrants, we can only conclude that suppurative fever is not contagious. It is," he adds, however, " desirable to isolate cases of suppurative fever, and to remove them from amongst operation cases, lest the latter should be exposed to any deleterious influence."

As regards suppurative fever being caused by thrombosis or mechanical obstruction, we know that this doctrine has been chiefly elaborated by Professor Virchow. Capillary embolia, according to his notions, frequently give rise to minute deposits in the kidneys, spleen, and even the substance of the heart. When a considerable fragment of a thrombus becomes wedged at a certain point of an artery, it may in its turn crumble away through the onward pressure of the blood, and thus the minute particles into which this crumbling gives rise, are conveyed with the smaller branches into which the vessel breaks up. Thus alone Virchow appears to think that the fact can be explained, that in the district supplied by an artery of considerable size, a number of little deposits of the same sort are ound. The secondary abscesses show the same fate as the thrombus—heal or decay. In opposition to this view Dr. Braidwood observes that pyemia often exists without any evidence of phlebitis

or thrombosis; still oftener it occurs without any evidence whatever that it has been preceded by either of these or by any other affection of the veins. It has, therefore, in his opinion, not been satisfactorily shown that either phlebitis or thrombosis stands in any special or peculiar manner in relation to pyemia as cause and effect.

Virchow's ingenious theory is further opposed by the fact that uncomplicated embolism as derived from an apoplectic clot, from atheroma or from clots caused by mechanical irritation or phlebitis, is followed by fewer points of congestion and stasis, than is the case in suppurative fever. In the former instance, too, the area of each embolus is wider, and degenerative softening is less liable to follow. Bristowe also points out that this embolic theory does not explain cases "starting from some part of the systemic nervous system in which the lungs escape, while secondary deposits abound in other organs."

It is true that this work contains much which is not original; the opinions and theories of many authors are quoted and criticized; such criticism forms an essential part of the treatise, and it appears to us to be done with much candour and fairness. But there is also good original matter in the volume, and altogether we do not hesitate to pronounce it a monograph of great merit.

RECENT WORKS ON DISEASES OF THE SKIN.

1. *A Manual of the Diseases of the Skin.* By Balmanno Squire, M.B.F.L.S. London: Churchill. 1869. Smaller edition, pp. 204.

2. *Skin Diseases: their Description, Pathology, Diagnosis, and Treatment.* By Tilbury Fox, M.D., Lond. Second edition. London: Renshaw. 1869. 32mo, pp. 472.

3. *On the Parasitic Affections of the Skin.* By Dr. M'Call Anderson. Second edition. London: Churchill. 1868. 8vo, pp. 250.

If the human skin were to profit in proportion to the attention bestowed upon it, as evidenced by the flood of cutaneous literature, we should naturally look for some striking diminution in the number of those affected by skin diseases, or at the least for signal advances in our methods of treatment.

Every year there issue from the press handbooks, manuals, guides for the student and the general practitioner, and practical and theoretical treatises. We are offered information on the real nature and rational treatment of eruptions, are furnished with reports of Skin Dispensaries, while special periodicals, in the English, French, German, and Italian languages, give us the means of becoming acquainted with the views of the leading authorities, and with the general progress of dermatology.

"The skin" is a favourite specialty just at present; and every physician who attends a skin dispensary, or demonstrates in that department at a general hospital, seems to be unwilling that his personal experience should pass unrecorded, and forthwith writes a book.

From the abundance thus presented to us, it is embarrassing to make an individual selection; but since to the earnest student a good handy text-book on this subject is indispensable, we do not think that he will err much in selecting one of those whose titles are given above.

Few will now question the importance of training our future practitioners in the great subdivisions of medical science generally recognized, and in the case before us, even taking the lowest ground, a knowledge of skin diseases is required of the aspirant for a medical diploma by several of the examining bodies, while if we regard the frequency of their occurrence among rich and poor, the often puzzling features in their diagnosis, the determination of the existence or non-existence of contagious qualities, and finally the satisfaction and credit we gain by the successful treatment of a hideous and disgusting family of disease, we cannot too forcibly urge upon the student and the practitioner the imperative necessity of a rational and systematic study of the lesions of the skin.

With this end in view, all general hospitals would do well to set apart a certain time each week for teaching the student to cultivate his faculties of observation and discrimination in the recognition of skin diseases, for the examination of which the out-door department will always afford abundant means.

It is one thing to set up special hospitals, and quite another thing to establish special means at a medico-chirurgical hospital for the study of an important branch of medicine. But since the scattered cases, occurring in the wards of an hospital, are too few to lend much material for instruction, it is only by some such means as that just alluded to that we can aggregate a sufficient number of cases for profitable teaching.

Moreover, the attention necessitated by the accurate observation of the precise differences between the various elementary lesions and of their manifold gradations, will foster that painstaking habit of mind so essential to the well-furnished practitioner, while the eye will be exercised in the study of what may be called the natural history field of the physician, for we do not forget that the skin has a zoology and botany of its own.

Accurate diagnosis is the essential preliminary to a rational line of treatment, and since it is impossible to become familiar with the characters of a protean group of diseases without seeing them frequently contrasted and mutually illustrated, the student who has had the golden opportunity of being thus taught, will start from a higher vantage ground; and, by being able to bring his collective experience, gained while at hospital, to bear at once on the isolated cases occurring in general practice, will be in a position to extend his knowledge on a sound basis, and will feel a certainty of diagnosis otherwise unattainable.

And as the commoner forms of skin diseases may be taken as not more than twelve or fifteen, a comparatively short time devoted to this special study will familiarize him with those forms of eruption which will be sure to meet him soon in practice.

We would advise the student to initiate his studies with a small and not too comprehensive work; and as Mr. Squire's little manual is suitable in these respects, we shall accord it the first notice.

Mr. Squire limits himself to the diseases met with in this country, and omits such affections of the skin, *e.g.*, acute eruptive fevers and cancerous sores, as are described in the general systematic treatises on medicine or surgery.

He lays great stress on diagnosis, without which indeed the skin doctor is powerless; and as it has been by increased knowledge in this respect that our views of treatment have progressed, so it is in this direction that we must chiefly look for still further improvement. In the instructions for treatment, carefully selected local remedies are especially enjoined, coupled with a rational constitutional treatment; and, as a rule, specifics are discarded, and their empirical use discountenanced. But we cannot consent to the author's verdict on arsenic—that its reputation has fallen into decline, and that "on some few eruptions it slowly exercises, though often at the expense of much discomfort to the patient, a beneficial influence."

On the contrary, we believe that no other remedy will supply

the place of arsenic, when prescribed with due care, but that at present we must content ourselves with its empirical administration, more especially in the *relapsing* skin diseases, as pointed out by Mr. Hutchinson.

In this latter view we recognize the connexion which possibly may exist between the influence of arsenic on the skin and its admitted anti-periodic action.

Sarsaparilla is summarily dismissed as a remedy for constitutional syphilis, with the statement that "it is quite inert;" however, in this opinion many physicians of the present day will perhaps concur.

In some of the important diseases—for instance, eczema—the treatment is not satisfactory, and a crude list of remedies is given without any directions as to their respective uses. What can we learn from a wearisome list of sixteen local applications, including everything from huile de cade to vermilion ointment, while we are simply told that these "are the most important topical remedies?"

Surely, in a disease the most common, the most multiform, and often the most obstinate, we require some more definite information than a selection of names from a list of materia medica.

We were surprised to find that the author makes no allusion to the value of flexible collodion as a protecting agent in herpes zoster. In the numerous cases which occurred last summer and autumn, we found the greatest advantage to result from the immediate painting the vesicated patches with the collodion, and repeating the same as often as required. It is the cleanest and most effectual means of preventing the rupture of the vesicles, and we can warmly recommend it even in cases where superficial ulceration has taken place.

The classification adopted is essentially that of Willan, though, in common with most writers, the syphilides, the sebaceous diseases, and the animal and vegetable parasite diseases of the skin are separately treated.

The numberless and often useless specific names are very properly subordinated to the general characters of each disease; and a useful feature in the book consists in the giving at the beginning of every chapter a definition or summary of the chief characteristic points of the genera included under each class.

A favourite view of the author's is the purely pedicular origin of prurigo senilis; but, as it is not universally accepted, we will let the autnor speak for himself:—

"On stripping a person affected with prurigo senilis, it would not occur to any one who was unaware of the fact, that the disease was produced by a pediculus. The pediculi are rarely numerous enough to arrest the eye; and more than this, even a careful scrutiny of the skin, including in the survey the parts of it that are most affected with eruption, will, in the majority of cases, fail to detect the presence of a parasite; not even a *nit* is to be seen on any part of the skin, or on any of the hairs growing from it. Now the pediculus capitis and the pediculis pubis, in cases where the insect itself is not easily to be found, may always be readily detected by means of the nits attached to the hair of the part they inhabit. It is not to be wondered at then, that the part played by the pediculus corporis should have been so often overlooked.

"The parasite lives, not on the skin, but on the underclothing.[a] It is on the inner surface of the undermost article of clothing, whatever it may be, that the parasite is to be sought for, and here it is not always very easy of discovery. As already stated, the pediculi are rarely to be found in numbers; a very few of them are capable of causing very severe irritation. A careful investigation of the patient's shirt may lead to no result, and yet his disease be due solely to the pediculus. The parasite nestles in the "*gathers*" or "*folds*" of the shirt. These are most numerous in a man's shirt, at below the back of the collar of the shirt; and hence it is, that in men the disease is usually most severe on the back of the shoulders, and always more severe on the shoulders than on the chest. In women (whose under garments are arranged differently) the eruption is commonly as severe on the breast as it is on the back of the shoulders. At and below the waist, where the shirt is again thrown into folds, the pediculus again establishes himself, and, accordingly, the loins and upper part of the thighs are also common situations of the disease."

The chapter on the syphilides is good, and the diagnosis carefully given. A decided mercurialist—he prefers the green iodide of mercury, both in the second and third stages; and he thinks that iodide of potassium is chiefly of value as an adjunct to and not as a substitute for mercury, even in the advanced periods.

Thirteen woodcuts—some of them engraved from micro-photographs by the author, and all of which are devoted to the parasitic diseases—illustrate the book, which is a handy and useful companion.

Dr. Fox, in the new edition of his Manual, aims at providing the practitioner, and especially the student, with a concise and

[a] "It is, of course, not to be understood from this that it does not *feed* on the skin. It lives upon the blood just as the flea does."

practical account of diseases of the skin for general use, combining the pith of his two former works. The exotic diseases of the skin are included for the benefit of those about to enter on foreign service. A glossarial index is given, and a formulary of nearly 200 selected prescriptions is furnished, the only objection to which is that "to each formula is appended the name of the disease in which it is useful"—a notion that savours of rule-of-thumb practice.

The classification adopted is on a pathological basis, and is founded on the plan proposed by the College of Physicians in their new nomenclature report.

A considerable number of woodcuts, illustrate the parasitic diseases especially. We regret more trouble was not taken in bringing out the book, as the binding is by no means substantial enough for a manual. The first few chapters comprise a compact and useful summary of the general pathology, etiology, and diagnosis which is well adapted to the students' wants, and, indeed, the book bears evident marks of being specially intended to furnish that class of readers with the necessary fund of information. For example, when stating his own view as to the mixed nature of the so-called strophulus, he adds, "However, at examinations candidates are required to say that strophulus is the lichen of infants and young children."

The diagnosis in many cases is almost too elaborately given, and some of the difficulties raised are, we fancy, more to show the author's ingenuity than likely to be of service to the student. Under the "Diagnosis of Eczema," seventeen or eighteen affections are enumerated, with which it might possibly be confounded, and the minutiæ of distinction are gone into with great detail. Taking Chapter VIII. on catarrhal inflammation or eczema—that cutaneous puzzle—as a fair test of the entire work, on the whole it will be found highly satisfactory; and, we think, that if the salient points of eczema were collectively stated, it would have saved much needless repetition in the after diagnosis. If we rightly apprehend the author's meaning, the following will stand as the real characteristics of eczema. Briefly defined as a "catarrhal inflammation of the skin, modified by the constitution of the patient," the essential diagnostic of the eruption is the tendency to free secretion, to the outpouring of a large quantity of fluid from the skin; the discharge has the peculiar property of stiffening linen, and dries into thin yellow crusts. However long standing any case of eczema may be, it will always furnish sufficient evidence in its history of the fact of

its being a *moist* disease, and the application of irritants will commonly evoke discharge—*i. e.*, there is a capacity for discharge always present that is absent in other similar diseases.

Speaking of the multitude of adjectives, many of them pentesyllabic, which have been affixed to the generic term eczema, he sensibly adds, and we cordially agree with him, "But really to dignify all these secondary changes by an elevation to the position and rights of special varieties is to me highly objectionable."

If ever the study of skin diseases is to become a part of the ordinary curriculum of medical education, it must be disencumbered of the jargon of pedantic terms with which some writers disfigure their descriptions. Thus, one of the leading British dermatologists, in treating of this malady, groups under different heads no fewer than twenty-one forms or varieties, the list of adjectives ending in "um" being enough to deter the most zealous from attempting to master them. Fortunately no one else is likely to make much use of them.

There is a form of cutaneous disease, common among the poor, and which it is highly important, with reference to treatment, to diagnose from its counterfeits.

Dr. Fox has described this eruption carefully under the name Impetigo contagiosa, and we will let our readers judge of its characters for themselves:—

"I am anxious again to direct attention to the *clinical* features of a common form of cutaneous disease, seen especially in dispensary and hospital practice, and universally classed by practitioners with eczema impetiginodes or impetigo simplex, but which is, as regards nature and treatment, a wholly distinct affection. Its cure is usually certain and easy by local means. It is classed under the term porrigo, as used by some writers, and is one of the many varieties of eruption which together constitute the composite "scald-head." I have hitherto called the disease contagious impetigo; for it is essentially inoculable (contagious). It is often *quasi*-epidemic; it differs in severity and in features at different times, tends to run a definite course, exhibits a uniformity of character as regards the eruptive condition, and is vesico-pustular in type. Mr. Wilson has recently stated that the disease is a distinct and common one. I had the pleasure of showing Dr. M'Call Anderson some cases a few weeks since, and he acquiesced in the special nature of the disease. Dr. Clifford Allbutt has informed me that he is now satisfied as to the existence of the affection as I have described it.

"*Clinical history.*—The disease is seen amongst children of the lower orders especially, probably in great measure because the opportunities for

contagion are more numerous, but occurs also in those who have all the advantages of social position and good hygiene. It is ushered in occasionally by smart, generally by slight, fever; or the child looks ill, pale, languid, and is said to have been 'in a burning heat,' or to have had 'cold chills.'

"There is clearly an affection of the system at large before the occurrence of any eruption, which in the majority of cases appears first of all on the face, or top or back of the head, in the form of 'little watery heads' (vesicles), that enlarge into flat bullæ. Sometimes the hands are attacked at the outset, and look as if burnt here and there; phlyctenæ may also arise out of and around the remnants of vaccinia, or about cuts or bruises. The disease then extends to other parts, the back of the neck, buttocks, feet, &c. The vesicles are always isolated. In five or six days the bulla may reach the size of a sixpence or shilling, unless ruptured, and then it is flat and depressed in the centre, the contents becoming turbid. The secretion consists of lymph-like fluid, granular cells, and subsequently pus cells.

"Scabs commence to form a few days after the appearance of the disease. They are characteristic of the disease, varying in size from that of a split pea to a shilling; they are flat, straw-coloured, dry, and granular-looking, and appear as if 'stuck on' to the part; they present, as a rule, no inflammatory areola around their circumferences, though this is the case in severer instances of the disease. If removed, little sores are observed beneath, more or less filled in by gummy-like secretion, or a little pellet of aplastic lymph. The disease may be spread from spot to spot by direct inoculation with this secretion in the act of scratching. The crop of vesicles is to some extent successive, though the majority of the places 'come out' in the first week or so. In some instances the disease resembles vaccinia very closely. There is always a uniformity about it; it always commences by vesicles; there are no papules present at the height of the disease. On the face the spots may be confluent, and then the disease resembles eczema impetiginodes; but the patches are made up of the elements described above. On the head the disease consists of circular, mostly isolated, flat-scabbed spots about the top and back of the head, the hair being matted by the crusts. There are usually no pediculi and no offensive smell.

"The mucous membranes of the eye and the nose are often implicated; then inflammation is produced by the development of little ulcers, that take their origin in the development apparently of vesico-pustules, identical with those seen on the surface of the skin. The eye may look as though affected by slight purulent ophthalmia, but soon recovers itself. All the children in a house may be attacked at one time, or consecutively, by the disease, and in such a way as to impress upon friends and attendants the idea of its being contagious, and under these circumstances it

may be regarded as scabies. *It may complicate eczema, scabies, and other affections, and vice versâ.*

"*Diagnostic features.*—Its apparently epidemic character in many cases; its attacking children; the antecedent febrile condition; the origin from isolated vesicles, which tend to enlarge into blebs, and to become pustular, the bleb having a depressed centre, and it may be, a well-defined, slightly raised, rounded edge; the *isolation* of the spots, the *uniform* character of the eruption, and its general and scattered condition; its seat, and frequent commencement about the face or head; the circular, flat, granular, yellow crusts; its contagious nature and inoculability; its frequently following in the wake of vaccination; the implication of the mucous membrane of the eye; the absence of pain, and especially troublesome itching at night.

"It may be confounded with *eczema;* but the history is altogether different, and the isolation, the small scabbed patch, the characters of the crusts, and the facility of cure, at once distinguish it. *Impetigo sparsa* does not arise from a vesiculation, but is primarily pustular, made up of aggregated pustules; it is not phlyctenoid; it it not contagious nor inoculable; it does not run a definite course; it is not confined to the young; it is not so amenable to treatment. *Pemphigus;* but here the blebs are more persistent, oval, and distended; the contents are watery and acid; it is non-contagious; it does not occur especially on the face or the head; it is less inflammatory, and wants the characteristic scabs. *Ecthyma:* This is primarily a pustular disease, seen also in adults; there is more induration and swelling: a good deal of pain; it is non-contagious; the scabs are heaped up and dark. *Pustular scabies:* This is the disease with which it is mostly confounded. It must be remembered that the two diseases may co-exist. Both *in children* attack the buttocks especially; both may exist about the hands and feet; but the distinctions are really very clear. In scabies there is no febrile condition; the eruption is *multiform.* If there be ecthymatous pustules, like impetigo contagiosa, they are covered by dark thick crusts; there are plenty of characteristic vesicles, with cuniculi, and papules. If the impetigo contagiosa begins about the buttocks, it appears presently on the face or the head, or both. There is not the irritation of scabies, so bad at night, nor the effects of scratchings about the body; the bullous origin of the disease is distinct, and the peculiar scabs are characteristic. The hands are not specially affected in scabies in the child, but even impetigo contagiosa may attack the hands and feet markedly; still there is no *multiform* eruption. Inoculation will settle the point in twenty-four hours, if we cannot find an acarus. We must not be misled into the idea that scabies exist because several children in the same house have a certain disease, and have apparently caught it the one from the other—a rule adopted by very many. Lastly, the two diseases may occur together.

"When a correct diagnosis is made, the treatment is easy. *The natural course of the disease is a short and definite one.* The disease sometimes occurs in badly-hygiened subjects, and, therefore, tonics may be given. The secretion is a most active element (per inoculation self-practised by the patient) in transmitting the disease to different parts of the same subject or to others; and this ensures perpetuation and chronocity. And, therefore, we should destroy the secretion, and then alter the behaviour of the surface that yields it. Astringents and antiseptics avail; but the best is a little ammonio-chloride of mercury ointment—five grains to the ounce. The scabs should be removed, and the ointment applied to the secreting surface. The disease is supposed to be due to the contact of those attacked with non-specific unhealthy pus; but there are many reasons against this, which cannot be noticed here. It is a very definite disease, dependent upon a particular poison, easy to treat, but little known."

This troublesome affection is well figured in Plate XX. of the New Sydenham Society's Atlas, under the name porrigo contagiosa, and described in the accompanying catalogue by Mr. Hutchinson, who, however, states that it is usually associated with pediculi—an association certainly seen in Dublin.

We were tempted to quote one or two other passages also; for example, the description of a curious variety of parasitic sycosis, but will content ourselves with recommending Dr. Fox's condensed little Manual as a safe guide to all who are engaged in the investigation of skin diseases.

The class of skin diseases to which Dr. Anderson devotes his elegantly got up and finely illustrated monograph is a peculiarly satisfactory one to treat of, seeing that we know more of the nature and causes of parasitic diseases than of any other cutaneous group, and consequently are in a better position to direct our curative means.

In order fairly to meet the increased attention now paid to the production of disease by external agencies, the present edition of this work has been extended, and the number of illustrations added to, which, as a rule, possess the merit of being original.

The classification naturally divides itself into the vegetable and animal parasitic diseases, and the dermatophytic affections enumerated are:—

1. Tinea favosa (honeycomb ringworm) Parasite; Achorion Schönleinii.

2. Tinea tricophytina (ringworm).
   Varieties. T. tonsurans (ringworm of the head); T. circinata (ringworm of the body); T. sycosis (ringworm of the beard); Parasite; Tricophyton.
3. Tinea versicolor (chloasma). Parasite; Microsporon furfur.
4. Tinea (?) decalvans (alopecia areata). Parasite; Microsporon Audouini?

The dermatozoic affections are ranged under—

1. Phtheiriasis. Parasite, pediculus.
   Varieties. P. corporis (prurigo pedicularis) Parasite, Pediculus corporis; P. capitis—Parasite, Pediculus capitis; P. pubis—Parasite, Pediculus pubis.
2. Scabies—Parasite, Acarus scabiei.
3. Morsus pulicis, cimicis, &c. (flea and bug bites, &c.)

Dr. Anderson holds that ringworm of the head, ringworm of the body, and ringworm of the beard (sycosis), are mere varieties of one and the same disease, and in opposition to Hebra, Hutchinson, and other authorities, follows the French school in their belief as to the truly parasitic nature of sycosis. The frontispiece represents an elaborate and beautiful plate of one of the hairs invaded by the fungus.

One of his favourite points, where he is again confirmed by continental teaching, is the non-identity which he believes will be found between the achorion Schönleinii, the tricophyton, and the microsporon furfur, the parasites met with in tinea favosa, t. trycophytina, and t. versicolor respectively; and the following is a summary of the proofs against their identity:—

"(1.) In all cases of successful inoculation with the *achorion*, *tricophyton*, and *microsporon furfur*, the same parasitic disease has been produced as that from which the parasite was taken.

"(2.) Of the innumerable cases *occurrining the human subject* illustrative of the contagious nature of tinea favosa, tonsurans, and versicolor, which have been recorded, there is no authentic case (if we except Hutchinson's, above referred to) in which one of these diseases gave rise to one of the others.

"(3.) The difference in the appearance of the eruptions, when fully developed, is so very striking as to lead to the belief that they are produced by separate parasites.

"(4.) There is no authentic instance on record of the transition of one of these diseases into one of the others.

"(5.) The difference in the appearance of the achorion, tricophyton,

and microsporon furfur is sufficiently striking to enable the observer in many cases to form a correct diagnosis from the microscopic examination alone.

"(6.) Of the numerous instances on record of the transmission of tinea favosa and tinea tricophytina *from the lower animals* by contagion or inoculation, favus has always given rise to favus, and tinea tricophytina to tinea tricophytina."

In the treatment of favus, sycosis, and ringworm of the head, he strenuously upholds epilation; and among the numerous parasiticides recommended for scabies, though he admits the value of sulphur, he prefers, to any other, styrax, on account of its aromatic odour, destructive effects on the acari, and its non-irritating qualities. It may be used as an ointment—℞ styracis liquidi ʒi., adipis ʒii., melt and strain; or as a liniment—℞ styracis liquidi ʒi., sp. rectificati ʒii., olei olivæ ʒi., mix.

To all who are particularly interested in the subjects it treats of, Dr. Anderson's work will be indispensable; and we hope soon to congratulate him on a third edition.

Researches on the Nature and Treatment of Diabetes. By F. W. Pavy, M.D., F.R.S.; Fellow of the Royal College of Physicians; Senior Assistant-Physician to, and Lecturer on Physiology at, Guy's Hospital. Second edition, revised and enlarged. 1869. London: Churchill and Sons.

The subject of diabetes mellitus, in any of the varied aspects under which it may be studied, whether physiological, pathological, or with respect to treatment, is one so fraught with the deepest interest to the physician, that any matter which can throw light upon the many dark phases of the disease, is sure to be received with welcome.

The author of the book before us is already familiar to every physiologist and practical man, as well by his original researches on the subject of glycogenesis, as his observations on the pathology and treatment of the disease under consideration. We therefore feel confident the favourable reception given to the former edition of his book will not be withheld by the profession from this.

Dr. Pavy may with truth be considered as the best and most recent authority on diabetes, entering, as he does, almost exhaustively into all the particulars of the subject, and being thoroughly

acquainted with the latest experiments at home and abroad. What above all else, in our opinion, entitles this second edition to the attention of the profession is, that, in addition to its being remodelled, and in a great part rewritten, it contains the experience of other physiologists on the vexed question of glycogenesis, as well as the more matured, and, we are glad to say, confirmed views of the author on that subject.

The book is divided into two parts: in the first are considered the chemical detection and quantitative determination of sugar in the urine, and its physiological relations in the animal economy. The second part deals with the pathology, etiology, symptomatology, and treatment of diabetes.

Although, no doubt, most are acquainted and familiar with the question of glycogenesis, it may not be out of place to mention a few of the leading facts discovered and proved by Dr. Pavy on this most interesting subject.

That there is amyloid matter in the liver of man, as the natural secretion of its cells, is a point upon which we believe all physiologists are agreed. It is a body belonging to the carbo-hydrate group. Bernard gives as its formula $C_{12}H_{12}O_{12}$ from the analysis of E. Pelouze; but Professor Apjohn of this city, so well known for the accuracy of his chemical analysis, has given its formula $C_{12}H_{10}O_{10}$, which is that representing the constitution of starch and dextrine.

The great question at issue, however, is not the existence of sugar in the liver when examined *post mortem*, but whether sugar is produced by the liver, and poured into the circulation as a natural phenomenon of life; that is, in other words, whether the glycogenic theory of Cl. Bernard be correct or not. While the author does not deny the existence of sugar in the liver and the blood, under certain conditions, as, for example, an excess of a saccharine dietary, and in certain diseased states, he considers that there is, normally, no sugar, beyond a trace, circulating in the hepatic veins or right side of the heart, and that there is no sugar, normally and during life, in the liver.

Dr. Pavy repeated the experiments of Bernard, upon which he had based his theory, and found that the presence of sugar in the liver and the blood of the right side of the heart, was easily shown to exist, when the experiments were performed as Bernard performed them, but that the same or similar experiments, when performed with more care and attention, were followed by negative results.

In fact, Bernard's conclusions were drawn from *post mortem* changes, and were, therefore, faulty as indicative of the real state of the liver during life.

The subject is considered, first, with regard to the blood, and, secondly, the liver. As these experiments have been long before the profession, we shall here only give the results Dr. Pavy has arrived at, in his own words:—

"In three successive experiments upon dogs, I carefully compared the blood from the right side of the heart with that collected from the portal vein. The specimens were treated as closely alike as it was possible to do; and, when tested with the cupro-potassic solution, the portal blood yielded the same slight reaction that was given by that derived from the heart. It was impossible, in fact, by means of the reagent, to recognize any appreciable difference in either of the experiments between the two. Now, one of the principal arguments upon which the glycogenic theory has been founded is, that a striking difference exists in the blood that has escaped from the liver, as compared with that which is flowing to it—the one, it was said, being highly charged with, the other free from sugar. It seems, however, that no such difference, taking the blood in the condition belonging to life, in reality can be traced.

"As far, then, as we learn from what has preceded, there is not, as a natural process of life, that flow of sugar into the circulation from the liver, for the purpose of destruction in the lungs, which the former mode of experimenting led physiologists to believe existed. After death, and under certain unnatural states during life, it is true there is a large escape of sugar from the liver; but, as a normal condition, there is only trace of sugar to be encountered in the blood between the liver and the lungs,—the same, in fact, that is also to be met with on the other side of the lungs; in the blood returning from the system at large; and even in the blood that is flowing towards the liver. The blood, therefore (viz., that escaping from the liver), which was formerly looked upon as affording the evidence upon which the glycogenic theory was founded, has nothing special belonging to it. As nearly as possible the same behaviour, as far as I can discover by the closest examination, is presented, no matter from what part of the circulatory system the specimen of blood may have been derived."

Again, when discussing the question of the liver itself, he says:—

"Taking a review of the results that have as yet been brought forward, the position of the matter may be said to stand thus: the evidence upon which the liver was supposed to enjoy a sugar-forming function was

based upon conditions met with after death. Now, it happens to turn out that these conditions can be shown to differ from those existing during life; and hence we are no longer justified in using them for the purpose they have hitherto been applied to, viz., as a foundation for conclusions regarding the physiological state. It is not that there is anything incorrect about Bernard's experimental results, as far as the results themselves are concerned, but what I have to speak against is that inferences have been drawn from them which they do not, strictly speaking, warrant. The results I have been describing as having been obtained by myself are perfectly compatible, not with our former conclusions, it is true, but with the experiments from which those conclusions were drawn. From an ordinary examination of the liver, and of the blood of the right side of the heart after death, we obtain reactions indicative of the presence of a large quantity of sugar, and the deduction hitherto drawn has been that the sugar existed there as a natural condition of life. Such a deduction, however, is obviously gratuitous. All that can be strictly or logically inferred from such an examination is that the liver and right-ventricular blood are in a saccharine condition *after death.* To obtain evidence of the state that exists *during life* requires a different mode of experimenting, and from such it appears that error has arisen through overstepping the strict letter of interpretation that the original experiments will bear."

The author then gives the experience of others confirmatory of his opinions, particularly referring to that of Dr. M'Donnell of this city, in his "Observations on the Functions of the Liver, Dublin, 1865," and that of MM. Schiff, Meissner, and Jaeger, published in the "Journal de l'Anatomie et de la Physiologie. Paris, 1866." Dr. M'Donnell's experiments gave results closely agreeing with those of Dr. Pavy, and the method he adopted of gradually freezing the animal, whose liver was about being experimented on, so that the liver as well as the rest of the animal was frozen, showed results still more corroborative of Dr. Pavy's views. MM. Meissner and Herzen experimented on living animals, and by plunging a portion of the liver into boiling water, so as to prevent any *post mortem* change taking place, they failed to detect any sugar in the part so operated on. The conclusion at which all these gentlemen have arrived is, that the amyloid substance is not transformed during life into sugar under physiological circumstances. A difficulty then naturally arose to account for its use in the animal economy, when Bernard's theory—that being converted into sugar it was used up and spent in combustion in the lungs—was undermined and discarded.

Dr. M'Donnell believes that, becoming united with nitrogen in the liver, it leaves it as a proteic compound, and may form one of the important constituents of the blood. Dr. Pavy, on the other hand, considers it aids the formation of fat:—

"In the first place, it may be said that it has been ascertained beyond dispute that starch and sugar, introduced with the food, lead, in the animal system, to the production of fat. Now, it has been shown by what has preceded, that, from the ingestion of these principles, a striking increase is occasioned in the amount of amyloid substance contained in the liver. There can be no question, indeed, from the results that have been mentioned, that starch and sugar pass into amyloid substance in the liver. The production of amyloid substance, therefore, may be taken as representing the first step of assimilation of the starchy and saccharine elements of our food, and, as these elements are known to proceed on into fat, we have grounds for the surmise that amyloid substance simply occupies an intermediate position between the two. The process of assimilation may go on to the production of fat in the liver, or, it may be, that it stops short at the formation of another principle which escapes from the liver and is elsewhere transformed into fat."

Dr. Pavy, without accepting Bernard's theory of glycogenesis, thinks that there is sufficient evidence to prove that the liver is the seat of error in diabetes, a faulty action giving rise to the sugar encountered in the complaint.

This error of function Dr. Pavy considers due more to an altered condition of the blood circulating in the liver than to any nervous influence on its vessels. Various experiments upon the sympathetic and pneumogastric nerves, made by him, fail to prove that this sugar change is directly due to them or under their control.

The difficulties in the way to a clear elucidation of this all-important point are still many and great, not the least being that morbid anatomy has contributed nothing to it.

No constant structural change of the liver is to be discovered with which to connect diabetes. "We have," Dr. Pavy says, "a manifestation of a disordered functional action to deal with, without any discernible anatomical alteration to account for it."

Want of space prevents us making further comments upon this most interesting topic; we shall, therefore—without doing more than recommending the portion allotted to the consideration of the pathology, as peculiarly well written and enlarged—pass on to notice the last, but by no means the least, interesting and practically

useful part of the work, namely, that dealing with the subject of treatment.

This is considered under the heads of diet and medicine. Among the latter, alkalies were at one time much looked to for good results, on this point our author's opinion is, that alkalies, to do any good, must be given in moderate doses, and continued for a considerable time, and even then it is not every case that is benefitted by their use. We find on reference, that Dr. Roberts considers their administration has no influence whatever on the secretion of sugar. Clinical experience, therefore, does not confirm the opinion of Miahle as to the merit of this line of treatment. In passing, we may mention that Dr. Pavy seems not to be aware that the above mentioned author, Dr. Roberts, had no difficulty in producing an alkaline state of the urine of diabetics, under the use of alkalies, since, in this edition (without any allusion to the opposite opinion of others), we find the statement again made, that a striking and peculiar circumstance specially belongs to diabetes:—That, notwithstanding the administration of alkalies (to the enormous extent of four ounces a day in one case) the urine does not acquire an alkaline character.

While Dr. Pavy was preparing his book for publication, the treatment of diabetes on the oxidation theory, by the peroxide of hydrogen, was attracting a considerable amount of attention. His opinion is, that it is perfectly devoid of power to influence the disease. This view we find corroborated, and more forcibly stated in a paper by the author, in the *The Lancet* of March, 1869. In this paper, in addition to his own experience, he gives Dr. Richardson's opinion of its merits. Dr. Richardson was one of the most prominent of its advocates at first, but he now says, "that he is obliged with regret to state that, at this moment, there is no proof that the peroxide of hydrogen is of specific value in the treatment of diabetes."

These opinions necessarily carry with them much weight, yet, whether the results be confirmatory of Dr. Pavy's opinion or not, it is to be hoped that those, under whose care cases may occur, should be most accurate and careful in their daily investigations of the progress of the disease under this new treatment, for by no other means will statistics be of any value in deciding this point. We lay stress on this, for since Dr. Pavy's book, and even since his paper was pubblished in last month's *Lancet*, we find cases recorded in the journals giving other and conflicting results.

The drug to which the author attributes the greatest success is opium. It may be given with benefit in large doses. Almost incredible quantities have been taken, in the case of a woman mentioned by Dr. Pavy, nine grains daily were reached. The case is given very shortly in his book; but since its publication, the full accounts have been detailed in one of the journals. The patient was a favourable one for experiment, as she was about sixty. The sugar disappeared when nine grains were reached, and she has since left the hospital to all appearances well. It is worthy of note, that in this case no restriction as to diet seemed to have been made.

We greatly regret that Dr. Pavy did not think it worth appending a greater number of cases similarly treated, as one case of treatment by large doses of opium is hardly sufficient to be a precedent for future guidance in similar cases; and in such an exhaustive treatise on diabetes as Dr. Pavy's book manifestly is, many more cases, either with or without restriction as to diet, might, we think, have been detailed with benefit.

The chief treatment is not, however, in administering medicines, but placing the patient in the most perfect hygienic conditions, as MM. Bouchardat and Trousseau have lately laid such stress upon, and restricting the diet to an almost complete exclusion of saccharine or starchy food. Too much care and perseverance cannot be expended in following out this line of treatment, as the infraction of it, even in the case of a single meal, may be followed by a return of the sugar in the urine, and the distressing symptoms consequent on it, not only immediately, but for several days succeeding the indiscretion.

The effect of a varied diet on the diabetic, in increasing or diminishing the amount of sugar passed, is well demonstrated in the case which Dr. Pavy has appended. He has admirably depicted the daily changes in the elimination of sugar by a plan, in which, at a glance, the rise and fall in the amount of sugar is seen to correspond accurately to the use of saccharine food, or its withdrawal.

While commending this book to the careful attention of every member of the profession, and congratulating the author on its production, we venture to suggest to Dr. Pavy to append an index and table of contents in his next edition, as their omission necessarily takes much from its utility as a standard work of reference.

1.—*Supplement to Dr. R. E. Scoresby-Jackson's Note Book of Materia Medica, containing the Alterations and new Preparations introduced into the British Pharmacopœia of* 1867. By ANGUS MACDONALD, M.A., M.D., Lecturer on Materia Medica and Therapeutics at Surgeons' Hall. Edinburgh: Maclachlan and Stewart. Pp. 46.

2.—*Summary of Remedies with their Composition, Doses, and Uses.* By JOHN EVANS, M.D., Apothecary and Chemist, 49, Dawson-street, Dublin. Manchester: J. F. Wilkinson. 32mo, pp. 63.

IN November, 1866, we drew attention to the useful work of Dr. Scoresby-Jackson. In the supplement by Dr. Macdonald, the arrangement of Dr. Scoresby-Jackson's note book is adopted, and to those who use it the Supplement is indispensable, as it contains a full account of the various changes and additions made in the last Pharmacopœia.

Explain it as we may, the fact is undoubted that several of the physicians who in this city and in London, enjoy the largest and most lucrative practices, use very extensively drugs which have never found their way into the official list. Dr. Evans, a scientific and experienced pharmaceutist, has, as is well known, for many years been most careful to procure, from reliable sources, not only the officinal preparations, but all new American and continental remedies, as soon as their powers were recognized; and we feel indebted to him for the publication of this little work, in which, arranged alphabetically, will be found the most important remedies in use in the United Kingdom, France, and America, excepting the pharmacopœian preparations, their composition, dose, and chief therapeutic virtue. To show the need of such a work, we need only mention that a few months ago a gentleman presented to us the prescription of an eminent Edinburgh physician, from which he had derived considerable benefit, we were obliged to confess that even with the name of the most prominent drug in it we were not familiar, and he then informed us that a London physician, one of the best known names in the profession, had been equally ignorant. Such being the case we were exceedingly glad to see the handy little book now before us.

PART III.

QUARTERLY REPORTS.

REPORT ON PRACTICAL MEDICINE.

By James Cumming, A.M.; M.D.; Professor of the Theory and Practice of Medicine, in the Queen's College, Belfast; Physician to the Belfast General Hospital; President of the Ulster Medical Society.

THE PATHOLOGY OF FATTY DEGENERATION.

From Dr. Ormerod, already well known by his observations on this subject, we have an elaborate paper on fatty degeneration. Dr. Ormerod denies that fat is produced except in living bodies, and rejects altogether the usually accepted theory regarding the adipocerous transformation. Adipocere he believes to be a substance composed of fatty acids, derived from the fat which existed in the body which has been subjected to the change, in combination with an alkaline or earthy base—ammonia or lime, for example—derived from the water with which the animal substance has been treated. The whole of these fatty acids are supplied by the pre-existing fat, and no fat whatever is formed during the change. Indeed a number of experiments showed that there was actually a less amount of fat in substances which had undergone the adipocerous transformation than there had been before these substances had been submitted to the process.

In the living body fatty degeneration is invariably preceded by other changes in the structures which ultimately become fatty. In striated muscle the first change which occurs is disintigration of the sarcous elements—a cleavage, either longitudinal or transverse, having taken place in them giving rise in the former case to the appearance of filaments, in the latter to that of discs. The appearance of the fatty change is subsequent to this, and depends on the existence of fatty matter in the blood.

Examinations of the process as occurring in the heart, liver, kidney, and placenta, have led Dr. Ormerod to the conclusion, that in all cases the fatty change is preceded by degeneration. This degeneration is the important element, the fatty infiltration being a consequence and not a cause of it. The source of the fat is the blood circulating in the part.—*Bartholomew's Hospital Reports*, Vol. iv., p. 30.

TREATMENT OF TYPHOID FEVER.

The external application of cold water, in cases of typhoid fever, has been of recent years extensively employed with remarkable results. The object of this method of treatment is to combat the excessive heat, which is an essential characteristic of all fevers. The thermometer accordingly becomes indispensable for the purpose of furnishing exact information regarding the amount of elevation of temperature which has been attained by the patient. "*Sine thermometro nulla therapeia*," has been adopted as a motto by Jürgensen, one of the principal advocates of the method referred to. The temperature may be taken by inserting the thermometer into the axilla, or, what is better, into the rectum, and should be ascertained every two or three hours. Jürgensen's rule is that whenever the temperature, whether by day or by night, reaches 104° F. (40° C.), cold water should be applied.

This is done either by cold baths, cold affusions, or by wet packings. Of these the first is by much the most efficacious and manageable. The advantages claimed for this mode of treatment, when it is employed systematically, and from an early period in the disease, are, that the frequency of the pulse is diminished; that the entire affection is less severe, the evacuations less frequent; that tympanitis, hemorrhage, and perforation occur very rarely; that pulmonary affections are less frequently met with, and, it is said, that when they do occur they do not contra-indicate the employment of the cold applications; and that the duration of the disease is diminished.

Under this treatment, Jürgensen reports a mortality of 6 in 250 cases; and results of the most satisfactory nature have been recorded by other observers. The employment of the cold water applications is believed to be quite compatible with the administration of remedies of various kinds to fulfil other indications, or to assist in the anti-pyretic action.

Professor Liebermeister, of Bâle, has published a detailed

analysis of a large number of cases of typhoid fever treated in that city, which possesses considerable interest.

From the summer of 1845, Bâle suffered from a severe epidemic of typhoid fever. Liebermeister records the results of the treatment of 1,178 cases of the disease in the hospital of the city, between August 22nd, 1865, and December 31st, 1867. Of these, 163 died, so that the mortality was at the rate of 13·8 per cent. During the previous five years the mortality in the same hospital was 25·7 per cent. The rate of mortality in the London Fever Hospital, during a period of 14½ years, is given by Murchison as 18·56 per cent. in this disease. In all Liebermeister's cases, cold water was applied externally. In one group of 839 cases, it was only applied, as a rule, once daily. Of this group 130, or 15·5 per cent., died. Having become convinced of the value of the cold water treatment it was more freely employed from September, 1866. The group of cases thus treated numbered 339, with a mortality of 33, or 9·7 per cent. To the obvious objection, that this diminution in mortality may have been the result of a favourable change in the severity of the disease, and that the favourable result may have really depended on the cases becoming milder, Liebermeister replies by showing that during the preceding five years the mortality fluctuated within very narrow limits, there not having been a variation of more than 2 per cent., and that the hygienic condition of the patients, from overcrowding, was unusually bad.

In this group of 339 cases a cold bath was given to every patient as often as his temperature, whether by day or night, reached 102°·2 F. (39° C.). The temperature was taken every two hours, and it frequently happened that a patient had a bath after each examination, or twelve baths in twenty-four hours. In some instances, above 200 baths were given to a single patient during the progress of the disease. To a tolerably strong patient, the bath is given for ten or fifteen minutes at 68° F. If it is not well borne, the time should be limited to five minutes. Cold affusions were occasionally employed, but were found to be troublesome and unpleasant to the patient, besides being less effectual in reducing the temperature. Wet packing was used with debilitated patients. Four successive packings, of a duration of from ten to twenty minutes each, are believed to be equivalent to a bath at from 68° to 70°, taken for ten minutes.

Of internal remedies calomel and iodine were pretty extensively

employed. Calomel was given in ten grain doses. In some cases only one dose, in others several doses were given. The first dose usually purged, but this effect was not produced by the succeeding doses. Usually a marked remission of the fever was observed after the purgative action of the first dose. Salivation, when it occurred, was slight, and not troublesome.

The following formula was used for the administration of iodine:—

Iodine, gr. vi.
Iodide of potassium, gr. xii.
Distilled water, a drachm.

Of this, three or four drops were given every two hours in a glass of water.

The results of the employment of these measures are as follow:—

First group, in which cold applications were sparingly used—

	Number.	Deaths.	Mortality per cent.
Cases treated without calomel or iodine, -	377	69	18·3
„ with calomel, - -	223	26	11·7
„ with iodine, - -	239	35	14·6
Total of cases, -	839	130	15·5

Second group, in which cold applications were fully employed—

Total number, -	339	33	9·7

In 43 cases of the second group calomel was employed, with only one death. Quinia, digitalis, and other remedies were also employed.

The results of this treatment, furnished as they have been by practical physicians, such as Bartels and Liebermeister, who have no leaning towards hydropathy in the ordinary acceptation of the term as a form of quackery, deserve attentive consideration.—*Deutsches Archiv. für Klinische Medicin*, Vol. iv., p. 413.

NORMAL TEMPERATURE IN CHILDREN.

Dr. Finlayson states as the results of observations on the normal temperature of children, that there is a daily range of temperature in them of between 2° and 3° F.; that there is invariably a fall in the evening of one, two, or three degrees, best marked between seven and nine p.m.; and that the minimum temperature is usually

reached at or before two a.m. According to Dr. Finlayson's observations, there is no definite relationship between the frequency of the pulse and respirations and the amount of normal temperature.—*Glasgow Medical Journal*, January, 1869.

INOCULATION OF TUBERCLE.

The subject of the inoculability of tubercle has been examined carefully by Cohnheim and Fränkel. Their experiments were made with guinea-pigs, and they found that the introduction of tubercle from the human subject was followed, if the animal survived long enough, by the development of unmistakable miliary tubercle in the inoculated animals; results which agree with what may be called the positive experiments of Villemin.

They also found, however, that the same result—namely, the development of miliary tubercle—followed the introduction of other substances than tubercle.

Portions of apparently healthy organs, pieces of cancerous tumours, condylomata, sarcomata, pieces of blotting paper, charpie vulcanized caoutchouc or guttapercha, when introduced into the peritoneal cavity, gave rise to a uniform result, namely, the development of tubercle in the animal subjected to the operation. These results are directly contradictory of Villemn's negative experiments, but agree with those of Dr. Sanderson and Dr. Wilson Fox, noticed in the number of the Journal for August, 1868.

The introduction of any of the substances which were employed was followed by peritonitis, and about one-half of the animals died from this cause in from one to four days after the operation—of course at too early a period to afford any evidence of tuberculosis. In those who survived, the peritonitis became circumscribed, and a tumour with a capsular envelope was formed. Within the capsule the foreign body was to be found, when charpie, caoutchouc, or similar substances had been used, but in no instance was it possible to recognize a trace of any of the portions of the organism which had been introduced, whether normal or pathological. The alteration which the portions of cancer, tubercle, &c., underwent, were so complete as to entirely prevent their recognition, even with the microscope. It is evident, according to the authors, since the systemic infection cannot be the direct result of the inoculation—a fact which is obvious in cases where caoutchouc, &c., have been introduced, and which is in the highest degree probable as regards

the introduction of animal substances—that the cause of the phenomena must be sought elsewhere. The really effective agent is the dead and degenerated pus which is found, in every instance, as the result of the reactive inflammation after the introduction of the foreign bodies. This pus is the true foreign body, and its absorption into the economy is the cause of the subsequent pathological changes.—*Virchow's Archiv.*, Vol. xlv., p. 216.

CURE OF SEA SICKNESS.

Dr. Dwinelle, of New York, publishes an account of a method of treating sea sickness, which he saw employed, by Dr. Le Coniat of the French navy, with remarkably successful results.

The skin over the stomach is moistened with a solution of sulphate of atropia, in the proportion of a grain to an ounce of water. A flat disc, forming the negative pole of an ordinary volta-electric apparatus, is applied over the pyloric end of the stomach. A sponge attached to the positive pole is passed, for three or four minutes, from the cardiac towards the pyloric end, varied by being occasionally passed downwards. The application is not painful, and is generally followed by refreshing sleep.

In a stormy passage from Brest to the United States of America Dr. Dwinelle, who suffered much from sea sickness, was treated in this way by Dr. Le Coniat, with great benefit; and in every instance in which he saw the remedy applied great and immediate relief followed, and generally a complete cure.—*New York Medical Journal*, January, 1869, p. 390.

TREATMENT OF EPILEPSY.

Dr. Brown-Sequard states that his usual prescription for epilepsy is as follows:—

Iodide of potassium, one drachm.
Bromide of potassium, one ounce.
Bromide of ammonium, two drachms and a-half.
Bicarbonate of potash, two scruples.
Infusion of calumba, six fluid ounces. Mix.

A tea-spoonful of the mixture to be taken before each of the three meals, and three tea-spoonsful at bed time, with a little water.

In syphilitic cases he increases the amount of iodide of potassium. In administering the bromides it is necessary to give a relatively larger dose at bed time, and smaller doses in the day if sleepiness is caused. The medicine should be pushed till anes-

thesia of the fauces is produced, and an acne-like eruption appears on the face, neck, and shoulders, &c. The bromides should be continued for fifteen or sixteen months after the attacks have ceased. An occasional purgative ought to be given, and if any debility be produced by the use of the bromides, wine and nourishing food should be used, with cod liver oil, arsenic, strychnia, &c.; and the cold douche or shower bath employed.—*Diagnosis and Treatment of Functional Nervous Affections*, 1868.

WHY IS THE BUCCINATOR MUSCLE PARALYSED IN HEMIPLEGIA?

The cause of the loss of power of the buccinator muscle so often observed in hemiplegia has been the subject of frequent discussion, and is of considerable interest in reference to the diagnosis of cerebral disease.

Dr. Todd, following Sir Charles Bell, regarded the paralysis of this muscle in hemiplegia as due to the implication of the fifth nerve, from which he believed it to receive some motor supply—the long buccal nerve from the fifth being, in his opinion, a motor nerve, and associating the muscle with mastication just as its supply from the seventh nerve associates it with expression.

On the other hand, Mayo and Longet stated as the result of direct experiment, that the nerve in question is purely sensory; and Professor Turner, of Edinburgh, reports a case in the "Journal of Anatomy," Vol. i., p. 83, in which he found that the buccal branch of the fifth nerve proceeded from the superior maxillary division of the nerve, and was consequently purely sensory, as are all the branches of this division. Mr. Bankart, also, in the same journal, Vol. ii., p. 325, adopted the same view as the result of experiments on the dog. Indeed, recent anatomists both in this country and on the Continent, seem to have adopted this opinion almost universally.

From this view of the source of motor supply to the buccinator, namely, that it is altogether derived from the seventh or portio dura nerve, it would follow that this nerve must be partially affected in hemiplegia; a fact which it is somewhat difficult to reconcile with the all but invariable escape of the orbicularis palpebrarum, as shown by the patient possessing the power of closing the eye of the affected side. Trousseau lays down as a diagnostic mark of the greatest value, that however complete the hemiplegic condition may be, the eye can always be closed, while in mere facial paralysis the patient is unable to close the eye. This test,

although not so invariably accurate as Trousseau believed, is undoubtedly of the highest clinical importance, and as it necessarily implies that the nerve-fibres of the seventh pair which supply the orbicularis completely escape, as a general rule, in hemiplegia, the very frequent implication of the fibres of the same nerve, which supply the buccinator, forms a pathological problem of some difficulty.

An interesting corroboration of Todd's opinion has been furnished by two cases detailed by Dr. Clifford Allbutt, in the recently published volume of the *Transactions of the Pathological Society of London*, and by a case reported by Dr. Heslop, of Birmingham, in the *Medical Times and Gazette* for 1868, Vol. ii., p. 442. The former cases go to show that the buccinator muscle may be unaffected as regards its contractile power, while all the other muscles supplied by the seventh nerve are paralysed; a fact which would be inexplicable, except on the supposition of there being another source of motor supply for the buccinator.

Dr. Heslop's case directly suggests the source of this motor supply, by showing that the buccinator may be paralysed as a result of injury of the motor division of the fifth nerve, the seventh nerve being altogether unaffected.

Dr. Allbutt's cases, which present a remarkable similarity to each other, occurred the one in a youth of eighteen years, the other in a girl of nine years. In each the symptoms were caused by tumour of the pons varolii. In each there was paralysis of the left sixth and seventh nerves, and right hemiplegia. In each the mouth was drawn to the right side, and the orbicularis palpebrarum of the left side quite paralysed. Dr. Allbutt states that the buccinator muscle, however, and the muscles of mastication were not paralysed.

Dr. Heslop's case, which is in various respects one of remarkable interest, occurred in a patient of fifty-two years.

A fibroid tumour, occupying the middle fossa of the base of the cranium, had, as was found on examination after death, completely destroyed the Gasserian ganglion and the orbital nerves, so that not a vestige of these structures could be recognized, while both divisions of the seventh nerve were found to be perfectly healthy, and unaffected by the tumour. During life, there had been ptosis, complete anesthesia of the left side of the face and of the globe of the eye. There had been no loss of power of the muscles supplied by the seventh nerve, with the exception of the buccinator, which

was paralysed. The face was free from distortion, and the muscles of the root of the nose and forehead acted vigorously on both sides. The patient had been "constantly tormented by the food getting between the left cheek and the jaws." It is impossible not to be struck by the curious apparent completeness of the pathological demonstration afforded by these cases of the correctness of Todd's statements, supposing the phenomena to have been correctly noted. Reported by practical observers, they are an evidence that the question may be regarded as still unsettled, and they derive additional importance from having been noted without apparently any reference whatever to the point to which we have adverted.

APHASIA.

Dr. Maudsley, in an able paper, examines the pathology of aphasia. The facts which have been ascertained are, he holds, altogether inadequate to establish the theory of Broca. There is no faculty of language having its seat in a particular part of the brain. The muscular acts of speech are strictly comparable to other co-ordinate muscular movements, such as walking, and have no need for any special faculty.

Several explanations of the phenomena of aphasia are suggested.

The patient may be unable to articulate owing to the muscular sense of the parts concerned in speech being lost, although the muscular power may remain quite unaffected. This would explain those aphasic cases in which the patient is able to repeat phrases which are spoken to him, although he cannot spontaneously articulate a word; the sense of hearing taking the place of the lost muscular sense in these instances, as the sense of sight does in patients in whom the muscular sense of the arm has been lost, and who cannot hold an object unless their eyes are directed to it.

In some cases there is *mental defect.* An aphasic person may imagine that his mental operations are proceeding in the most perfect manner when they are in reality very defective. In these cases, which are the majority, the patient cannot call up the idea while he may be himself convinced that it is only the word for it which is deficient.

In other cases, there may be *injury of some of the nerve-fibres*, which communicate between the grey matter of the convolutions and the motor centres, so that the patient cannot express his idea.

Or the *motor centres*, from which the muscular acts of speech

proceed may be injured, and, as a result, the memory of words and of how to say them may be lost.

The facts which have been observed point to lesion, not of the third left frontal convolution, but of the corpora striata, or of some motor nuclei in their neighbourhood; or of some of the communicating fibres between these and the grey matter of the convolutions which constitutes the primary or ideational centre.—*Lancet*, 1868, Vol ii., p. 690.

CIRRHOSIS OF THE LUNG.

Dr. H. Charlton Bastian contributes a case of cirrhosis of the lung, and an analysis of thirty cases of the disease. He has arrived at conclusions almost identical with those originally put forward by Sir Dominic Corrigan. Dilatation of the bronchi, however, has not been found to be universally present in these cases, and is not a necessary consequence of cirrhosis, as was supposed by Corrigan.

Dr. Bastian regards the cirrhotic condition as totally distinct from chronic pneumonia. It is a fibroid growth of which pneumonic inflammation may be the starting point, but which has no pathological kinship with that process.

Again, cirrhosis is equally independent of phthisis. Of the thirty cases tabulated, only five presented any evidence either of tubercle or of chronic lobular pneumonia. In each of these five the amount was insignificant, bore no proportion to the amount of fibre growth, and could only be regarded as accidental.—*Transactions of Pathological Society of London*, Vol. xix.

TREATMENT OF VALVULAR DISEASE OF THE LEFT SIDE OF THE HEART.

Professor Gerhardt proposes to treat fibrinous deposits and valvular diseases of the left side of the heart by the inhalation of alkaline solutions. A medicinal agent administered by the mouth must be absorbed and carried into the portal circulation, thence to the right side of the heart, after which it must traverse the lungs before arriving at the left side of the heart, and in this transit it must be much diluted.

On the other hand, medicinal substances introduced by the air passages, are carried by the pulmonary veins directly to the left side of the heart, which they reach in a much more concentrated form than if administered in the ordinary manner.

The solution used by Gerhardt contains from a half per cent. to

one and a half per cent. of bicarbonate of soda. The great value of this method he believes to depend upon its power of preventing fibrinous deposits upon inflamed or otherwise diseased valves, and of dissolving already existing vegetations. He recommends soda, because of the chemical action of its carbonate on exhausted muscle, and because of its diuretic effect. Potash cannot be used owing to its paralysing effect upon the muscular structure of the heart. Several cases are detailed in which the employment of this method has been followed by good results.—*Deutsches Archiv. für Klinische Medicin*, Vol. v., p. 207.

DIAGNOSIS OF POLYPI OF THE HEART.

Dr. B. W. Richardson gives a series of rules for the diagnosis of the occurrence of fibrinous deposits in the heart.

The symptoms are those of hemorrhage without visible loss of blood. They are falling temperature; pallid or livid surface; feeble, irregular, or fluttering pulse; muscular prostration, and gasping respiration. These symptoms may depend on nervous lesion, hemorrhage, flux, exudation, accumulation of fluid in the pericardium, or obstruction of respiration, so that it is necessary that all these be excluded. Dr. Richardson then proceeds to enumerate the physical evidences of the separation of fibrin:—

"The first of these is a peculiar dyspnea. I allude now specially to cases in which the obstruction is on the right side. The dyspnea is most distressing; it admits of no relief. If you ask where is the oppression, the finger is invariably pointed to the heart; if the patient can speak and explain his symptoms, he will describe that he has no difficulty in drawing in breath—that he has no pain, in the ordinary sense of the term, but yet he feels that he is sinking from inability to breathe. This dyspnea lasts to the end, and there is often intense working of the alæ of the nose. The explanation of the dyspnea is that the blood has been cut off from the air, so that, whatever efforts are made to breathe, there is no efficient result. I have already said that in the young obvious signs of emphysema attend the condition.

"There is dyspnea, again, when the obstruction caused by fibrin is on the left side; but, though severe in character, it is not of the same type as is described above. It is congestive rather in nature, and is referred by the sufferer to the chest generally, not specially to the heart.

"From the dyspnea I turn next to the heart itself. I was at one time of opinion that few, if any, special physical signs of separation of fibrin exist as reliable signs. A larger experience has, to a considerable extent,

modified and corrected that opinion, and indeed, during the last five years, I have detected not only fibrin within the heart, but the actual position of the mass in regard to the cavities, with extreme precision. The points I keep in mind are as follows:—If, with all the conditions likely to lead to separation, I find the action of the heart feeble and irregular, I make a careful examination with the stethoscope for the two sounds of the heart on the right and on the left sides of the organ. Whatever theory we may adopt as to the cause of the heart's sounds, one thing is certain—that, in health, the tricuspid and mitral valves act together, that the pulmonary and aortic valves act together, and that the first and second sounds respectively are coincident with the simultaneous action of those valves which move together at the same time. When, therefore, in any given case, the action of the valves on one side of the heart is impeded—when, for example, a mass of separated fibrin interferes with the valvular movements—then the sounds produced by the valves on the impeded side will be reduced or even lost altogether. It is possible to detect this. In a case I saw with Mr. Spencer Wells, where fibrin was being laid down on the right side of the heart, this line of diagnosis was so easy that he expressed to me it had only to be practised once to be recognized ever afterwards. Suppose, then, that the separation is on the right side of the heart, there will be feeble or deficient first and second sounds over the line of the right side of the organ—that is to say, in the line of the heart by the sternum. Turning, however, to the left side, both sounds of the heart will be heard.

"Supposing the separation of fibrin to be on the left side, these physical signs will be simply reversed—that is to say, the sounds of the organ will be faint or inaudible on the left, audible and distinct on the right side.

"One other distinctive point is worthy of attention. When the heart is blocked up with fibrin on the right side, its impulse is reduced, and its action is feeble throughout. When, on the other hand, the organ is blocked up on the left side, the action as a rule is for a long time irregular, tumultuous, struggling.

"In some rare cases there is separation of fibrin on both sides of the heart, in which the prominent symptoms are those of obstruction in the right cavities."—*Medical Times and Gazette*, Nov. 21, 1868.

AUSCULTATION OF THE ŒSOPHAGUS.

Dr. Hamburger advocates the employment of auscultation as a means of diagnosis in affections of the œsophagus. The present elements of diagnosis, namely, pain, dysphagia, and the introduction of a probang, are in many cases insufficient. Auscultation may be applied to the examination of the œsophagus, by listening

during the act of deglutition, either in the neck to the left of the trachea, from the hyoid bone to the supra-clavicular region, or in the back, to the left of the spine, from the sixth cervical to the eighth dorsal vertebra.

With some practice, the auscultator can distinguish, during deglutition—1, the sound produced; 2, the form of the substance swallowed; 3, the energy of the muscular contraction; 4, the rapidity with which the act of deglutition is completed; and finally, 5, the direction taken by the substance which is swallowed. For purposes of auscultation it is necessary that the patient should swallow a liquid, the ordinary alimentary bolus not being suitable.

The sound is altered under the influence of various morbid conditions. It is replaced by a friction sound when the mucous membrane has lost its smoothness, as in ulcerations, diphtheritic and other exudations, and when morbid growths are present.

The form which is assumed by a substance passing through the œsophagus resembles that of an egg with the small end uppermost. In states of weakness, in phthisis, in advanced age, and the like, the circular fibres of the œsophagus present no resistance to the passage downwards of the substance swallowed, which accordingly assumes more of a funnel shape. The rapidity of the passage of a substance through the œsophagus can be estimated by applying the left ear opposite the lower end of the œsophagus, in the back, to the left of the spine, and, at the same time, embracing the thyroid cartilage with the thumb and forefinger of the left hand. By this method, the precise moment can be ascertained at which the act of deglutition commences, which is marked by the elevation of the thyroid cartilage; and, by the ear, the time can be ascertained at which the sound of its passage to the lower end of the œsophagus becomes audible. Between these two periods there is an appreciable interval.—*Medizinische Jahrbücher*, Vol xvi., p. 123.

PHYSICAL EXAMINATION OF THE STOMACH.

Dr. Fenwick recommends the employment of auscultatory percussion for the purpose of defining the extent and position of the stomach. The mode of employing this method of investigation is as follows:—The cup-shaped end of a Camman's stethoscope is applied to the epigastrium at a point where gas has been previously ascertained by percussion to exist. With the finger, a point close to where the stethoscope is placed, is smartly struck. A distinct shock is felt in the ear applied to the stethoscope. The tap is

repeated, at varying distances from the stethoscope, till a point is reached at which the shock is no longer transmitted in this direct manner. This marks that the boundary of the stomach has been reached in this direction. By percussing the patient, when lying on one side, and afterwards when on the other side, and on the back, the gas may be made to distend each part of the stomach in turn, and an outline of the organ can be mapped out.

The principle on which the method depends is that the direct transmission of the shock to the ear ceases when the blow is made beyond the organ over which the stethoscope is applied. This principle had been previously applied to the examination of the heart by Drs. Camman and Clark.—*The Stomach and Duodenum*, by Dr. Fenwick, 1868, p. 4.

SITUATION OF THE STOMACH.

Professor Luschka contributes an important paper on the normal situation and relations of the stomach. According to his opinion, anatomists in general have fallen into the error of believing that a portion of the stomach is to be found in the right hypochondrium. This traditional mistake has been repeated in the principal anatomical works. Weber, Krause, Hyrtl, and the editors of Quain's Anatomy, all state that the pyloric end of the stomach reaches the right hypochondrium. The practical importance of an accurate knowledge of the situation of this organ, with reference to the diagnosis of its diseases, is so considerable, and the authority of Luschka on subjects of this kind is so deservedly high, that we have considered it desirable to summarize his conclusions.

From different methods of investigation he has arrived at the result, that about three-fourths of the stomach is situated in the left hypochondrium, and about one-fourth in the epigastrium. The portion contained in the left hypochondrium has a vertical direction, or from above downwards; that in the epigastrium, which is the pyloric portion, and is about two inches long, has a nearly transverse direction. When the stomach is pretty full, this portion is situated in front of the first two lumbar vertebræ, about three finger breadths below the ensiform cartilage. In many cases it does not pass beyond the median line, and, as a rule, it may be said that the pyloric end does not pass beyond a vertical line passing through a point, midway between the centre and the right margin of the sternum.—*Prager Vierteljahrschrift*, Vol. i., p. 114.

DIAGNOSIS OF THE SEAT OF INTESTINAL OBSTRUCTION BY THE INJECTION OF FLUIDS.

In his posthumous work on intestinal obstruction, Dr. Brinton stated that the seat of intestinal obstruction can be readily ascertained by observing the amount of fluid which can be injected into the intestine.

If only a pint can be introduced, the stricture is not lower than the upper end of the rectum; if one and a-half, or two or three pints can be introduced, the stricture is at a corresponding portion of the sigmoid flexure; a larger quantity points to the colon, but here the indications are less precise. In one instance, in which the stricture was seated at the upper part of the ascending colon, nine pints of fluid were introduced.

Dr. C. Hilton Fagge, in an elaborate paper on intestinal obstruction, draws attention to the fact that fluids may be injected so as to pass through a constriction, or beyond a tumour, while the intestinal contents may be unable to pass from above downwards. He quotes a case of disease in the sigmoid flexure, in which four pints of warm water were injected. Of this only a small portion returned, the greater part being retained, and no doubt adding injuriously to the accumulation already existing within the intestine.—*Guy's Hospital Reports*, 1869, p. 319.

Dr. Von Trautvetter has examined the question of how far fluids can be made to ascend in the intestine.

His experiments were made by injecting a solution of prussiate of potash, and by treating the intestine, when laid open afterwards, with a solution of perchloride of iron. A blue colour was produced, marking exactly the distance to which the injected fluid had penetrated. By comparative experiments on dead and living animals, and by the, as it appears to us, unjustifiable experiment of injecting a moribund patient, he arrived at the conclusion that the intestine during life is capable of receiving the same amount of fluid as after death. In the absence of obstruction from stricture, morbid growths, impacted feces and the like, injections can be made to penetrate to the commencement of the colon, but for effecting this a long elastic tube is indispensable.—*Deutches Archiv., für Klinische Medicin*, Vol. iv, p. 476.

EARLY SIGN OF NEPHRITIC IRRITATION.

Dr. Owen Rees has found that a valuable indication in the early stages of kidney disease may be derived from the presence in

the urine of *blood-extractives*, which may be recognized before the appearance of albumen in that fluid. The escape of the extractives shows that a constant and important drain is going on from the blood, and is to be regarded as a warning of approaching albuminuria. The *blood-extractives* may be detected by the addition of tincture of galls to the urine, which immediately precipitates the extractive matters. After five or ten minutes, the earthy and potash salts will be thrown down by the spirit contained in the tincture, so that it is necessary to remember that the reaction produced by the extractives occurs immediately after the addition of the tincture.—*Guy's Hospital Reports*, Third Series, Vol. xiv., p. 431.

METHOD OF APPLYING NITRATE OF SILVER IN ERYSIPELATOUS INFLAMMATION.

Mr. Higginbottom, F.R.S., of Nottingham, to whom the profession is indebted for the knowledge of the value of nitrate of silver in external inflammations, complains that the directions given by him have been incorrectly copied by writers on the subject. His mode of applying the remedy is as follows:—

"The affected part should be well washed with soap and water, then with water alone, to remove every particle of soap, as the soap would decompose the nitrate of silver; then to be wiped dry with a soft towel. *The concentrated solution of four scruples of the nitrate of silver to four drachms of distilled water is then to be applied two or three times on the inflamed surface and beyond it, on the healthy skin, to the extent of two or three inches.* The solution may be applied with a small piece of clean linen, attached to the end of a short stick; the linen to be renewed at every subsequent application. As the solution of nitrate of silver is colourless, it is necessary to pass a little linen, just moistened, over every part where it has been used, in order to be equally diffused, so that no part be left untouched.

"In about twelve hours it will be seen whether the solution has been well applied. If any inflamed part be unaffected, the solution must be immediately reapplied. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread; but is then generally much less severe, and is eventually checked by repeated application. It is desirable to visit the patient every twelve hours, until the inflammation is subdued.

"By these means we have complete control over the disease.

"For the successful application of the nitrate of silver, the ordinary

brittle stick, either solid or in solution, must be used. Not the 'lunar caustic points perfectly tough,' nor the crystals and cake used for photographic purposes."—*The Practitioner*, January, 1869, p. 34.

TREATMENT OF RHEUMATIC FEVER.

Especial attention has been recently devoted to the different methods of treating acute rheumatism, and a considerable amount of information has been collected with regard to the subject. On no question relating to practical medicine does there exist greater diversity of opinion, both in this country and abroad. Authorities whose views are entitled to the highest consideration, recommend plans of managing the disease which differ in the most extreme degree from each other. General and local blood-letting, antimony, alkalies, colchicum, opium, quina, and blisters (a list which might be easily much increased), are all therapeutic agents of undoubted power, but the majority of them are certainly very dissimilar in their *modus operandi*.

On the other hand, some physicians of the greatest eminence have expressed serious doubts as to whether benefit is derived from the use of any remedy whatever in dealing with the disease.

Trousseau, who was far from being a sceptic as to the powers of medicines, and who did more than any physician of his generation to extend the field of therapeutics in France, taught that except to relieve excessive articular pain, and to promote perspiration, we should not interfere with the natural course of the disease in the absence of any special indication requiring attention.

The first and essential step towards the estimate of the value of any mode of treatment in acute rheumatism, as in any disease, is to ascertain what is the natural course, duration, and termination of the affection when altogether uninfluenced by remedial measures. In this respect it is impossible to over-estimate the importance of a paper on the "Natural History of Rheumatic Fever," by Drs. Gull and Sutton, read before the Royal Medical and Chirurgical Society, of which an abstract appeared in the weekly journals.

Dr Sutton had previously published, in *Guy's Hospital Reports*, an account of some cases of acute rheumatism observed in the wards of Dr. Gull and Dr. Owen Rees, in which the expectant method was carried out, the patients having been treated for the most part with mint water. From a further experience of cases treated in the same manner, Drs. Gull and Sutton state as their opinion, that

the rheumatic process runs its course as favourably under the expectant treatment as under the treatment by drugs, and that the heart does not become affected more frequently in cases managed on this plan than in those which have been submitted to the ordinary modes of treatment. These conclusions are based on an examination of the history of twenty-five cases treated by mint water. Of these patients none had previously suffered from rheumatism. Twelve had heart disease on admission into hospital, two gave doubtful indications, and eleven were free from heart disease. No patient was attacked with organic disease of the heart while under treatment. The total duration of the disease from the commencement, including the period which elapsed before the patient came into hospital, was on the average seventeen days. The authors' report, as the result of their observations regarding the management of the disease, that

"At present, therefore, as regards treatment, our cases seem to show that we are limited to a careful regimen of the patient. Rest, mechanical and physiological—rest in the very outset of the disease. We ought not to wait until the rheumatic process has become well developed in the joints. To regulate the temperature. To moderate excessive skin function by sponging the surface of the body. To allay pain, by placing the patient in an easy position, and sometimes by opiates. To sustain the organic nerve power by light diet, and occasionally by small doses of alcohol. To procure rest by the simplest means, especially avoiding such movements of the body as may excite the circulation. In fine, to place the patient in a physiological state of mean rest, if it may be so termed, of the nervous, the circulatory, the muscular, and digestive systems. To do this fully will often tax all our energies, and require often more consideration than is requisite for prescribing any supposed appropriate drug treatment. We are, therefore, at present, advocates of the exactest treatment of the patient under acute rheumatism, though we may doubt the value of so-called specific drugs."—*The Lancet*, January 16th, 1869.

Whatever may be our opinion as to the propriety of a plan of treatment such as that proposed by the authors, it is evident that their communication is of the highest value as a contribution to our knowledge of the natural history of the disease, and as furnishing a standard for comparison with future observations regarding its therapeutics.

From America we have a report of a series of thirty cases of acute rheumatism, furnished by Dr. J. M. Da Costa. The treat-

ment employed was the administration of bromide of ammonium in doses of from fifteen to twenty grains every third hour, well diluted. The medicine was omitted at night, a patient taking from one and a-half to three drachms in the twenty-four hours.

Dr. Da Costa regards it as a proof of the beneficial action of the bromide treatment, that in no case did endocarditis arise after the patient had been put under treatment. In one case pericarditis was developed while the patient was in hospital. We have seen that as far as endocardial inflammation is concerned the expectant plan, according to Drs. Gull and Sutton, gives results equally favourable, while under it no pericardial inflammation became developed.—(*Pennsylvania Hospital Reports*, 1869, p. 63.)

An interesting account of the method of treatment of acute rheumatism employed by a number of the hospital physicians of London, and of the provinces, has been published in the *British Medical Journal* for January 2nd and 9th, of the present year.

The great majority are in favour of the alkaline treatment pushed to a greater or less extent. Of fifteen physicians who have expressed their opinions, ten adopt, in the main, this mode of treatment; one is in favour of blisters; one of aconite; and three advocate a mixed plan of treatment.

We have considered it as likely to be of value to add, as an appendix to this report, the opinions of a number of the principal hospital physicians of this country, with regard to the treatment of this disease, which have been kindly furnished to the editor of this journal for the purpose.

We believe that these statements will be found to possess a permanent interest. Embodying the results of the matured experience of some of the ablest members of the profession, and impressed with the eminently practical and eclectic character which has always distinguished Irish medicine, they furnish an important complement to the statements of opinion which have been already published on this subject.

OPINIONS OF IRISH PHYSICIANS ON THE TREATMENT OF ACUTE RHEUMATISM.*

From JOHN T. BANKS, M.D., M.R.I.A.; Physician to Richmond, Whitworth, and Hardwicke Hospitals; ex-King's Professor of Practice of Medicine.

THE treatment which I rely upon in rheumatic fever may be termed eclectic, inasmuch as I do not confine myself to any of the so-called plans of treatment. The remedial agents I generally employ are alkalies, opium, blisters, and quinine. I believe it to be impossible to lay down rules applicable to all cases, but with the results of this complex treatment I have reason to be satisfied. The value of quinine in obstinate and frequently relapsing cases of rheumatic fever is not, I think, sufficiently recognized. Without claiming for any remedy, or any combination of remedies, the power of preventing with certainty the advent of complications, I am nevertheless impressed with the belief that treatment judiciously directed so as to meet the exigencies of each individual case has the effect of shortening the disease and diminishing the proclivity to cardiac inflammation.

From THOMAS E. BEATTY, M.D.; ex-President King and Queen's College of Physicians; Physician City of Dublin Hospital; late Professor of Midwifery in the School of the Royal College of Surgeons.

Having had the misfortune to have ample opportunity of studying rheumatic fever in my own person, I think I am in a position to offer some observations upon it. My first attack was in the year 1823, the next in 1826, another in 1828, then in 1836, the next in 1841, followed by another in 1843, after which came one in 1851, and the last was in 1864. These were all great and serious attacks, besides which numerous minor ones and threatenings occurred in the intervals. The earlier attacks were all acute rheumatism, and as years crept on they assumed the nature of rheumatic gout. During these attacks I had the kind care and

* These communications were asked for at the suggestion of Professor Cuming. Unfortunately only the briefest time could be allowed for their preparation, and the editor desires to say how exceedingly obliged he feels to those gentlemen who, at the very busiest season of the year, found time to furnish them, and to express his regret that it was impossible to collect the opinions of several eminent provincial physicians, whose views on this subject would have been of much value.

attendance of the most eminent physicians in Dublin, and once, in 1826, Dr. Stock, of Clifton, took charge of me. It can be imagined that in such a long range of years, and passing through so many able hands, a variety of treatment was adopted, but sad experience compels me to say that in no instance did medicine appear to have any effect in controlling or shortening the disease. I was never less than a month, often two months, in bed, and another month was required to enable me to go to work, and in 1836 and 1864 I was six months disabled by each attack. I had the good fortune to escape any threatening of cardiac disease. When the attacks were over I was perfectly free from all disease or stiff joints, and I am now, thank God, as well as any man alive. The treatment was, of course, of various kinds. Alkalies and colchicum were given, but I don't think in large amount, and the alkalies certainly not as largely as is now recommended. I have a lively horror of the nights passed in the beginning of each attack. A state of semi-delirium when awake, and frightful dreams in broken sleep, to be succeeded by profuse acid perspiration, which caused an indescribable exhaustion, and was abominable in smell, made the advent of night be regarded with dread, and I eagerly watched the first dawn of daylight to have the window shutters thrown open, and thus put an end to what had been a long state of suffering through the weary hours of darkness. As joint after joint became affected, I found the greatest relief in having the joint enveloped in a thick layer of raw cotton, completely covered by oiled silk. This at once gave ease to acute pain, and generally in forty-eight hours that joint was well, but it often happened that the pain returned two or three times to the same joint. I have had at the same moment every joint of my body, including the joints of the neck, in a state of acute suffering. I constantly observed, when any of the large joints were affected, such as the knee, shoulder, or elbow, that I could localize the disease to one of the small articulations connected with it. Thus in the knee I could distinctly discern that the seat of the disease was the articulation of the fibula with the tibia, and I could cover the whole of the part from which the pain proceeded with the point of my finger. And in the shoulder, where the whole joint appeared to be suffering, I could localize the entire mischief to the junction of the clavicle with the acromion process; and in the elbow the joint of the radius with the ulna was the seat of the disease. Opiates at night to procure sleep, and the cotton and oiled silk were what

I derived most benefit from. In my own practice the most rapid recoveries I have seen in young persons have been from the free use of lemon juice, from one to two ounces of which were given every third or fourth hour.

From CHARLES BENSON, M.D., Physician to the City of Dublin Hospital, and Professor of Practice of Medicine in the School of the Royal College of Surgeons.

You ask what is the impression made on my mind by the experience which I have had in the treatment of acute rheumatism? "Does the alkaline, the blister, or any other treatment unmistakeably influence the duration of acute rheumatism, or lesson the per centage of hearts damaged?"

I am glad you ask for the impression made on my mind, and not for precise statistics. I could not well supply the latter, but I have no hesitation in stating my conviction that treatment *does* influence favourably, the duration of the disease, and lessen the per centage of hearts damaged.

The treatment which I generally prefer is "the alkaline;" giving the bicarbonate of potass, for the most part, with lemon juice in effervescence, sometimes with decoction of cinchona, or with colombo, according as may best suit the stomach, or condition of the patient in other respects. I usually combine colchicum and digitalis with these, giving, in 24 hours, from 30 to 60 minims of each, and at bed-time an opiate. My favourite opiate is Dover's Powder—10 or 15 grains at night, and, if there be much suffering, 5 grains three or four times a day in addition. I think the colchicum helps to eliminate the *materies morbi* from the system, and I fancy the digitalis promotes the same object, while by its sedative influence it lessens the danger of cardiac complication. I do not prescribe the bicarbonate of potass in such large quantities as Dr. Fuller recommends. It is too lowering for the citizens of Dublin. I seldom use more than 4 drachms in the day. Sometimes I give a little iodide of potassium also, and when the patient is scrofulous or tainted with syphilis, this appears to be useful. In delicate or scrofulous subjects I give cod-liver oil freely, and the iodide of iron or some other chalybeate. I regulate the bowels with injections of soap suds, to which I add a little soda or potass to follow up the alkaline plan, without too much distressing the stomach. When a joint is particularly painful I put on poultices of linseed meal, containing some

potash or soda, and when effusion takes place into a joint I often have recourse to a blister. The jerking pulse and impulse which precede the murmur of endocarditis for 12 or 24 hours suggested to me the employment of digitalis, and I think it is of use as I said. When the heart is threatened, which may always be known by the jerking pulse and impulse, I apply blisters to some of the joints, and just below the left nipple—pushing the opiates and digitalis remedies still further.

Under this management, which is the alkaline treatment somewhat modified, I think I shorten the duration of acute rheumatism without protracting the duration of the convalescent period; and that I lessen the percentage of hearts damaged. I thing so, but rheumatism is so fickle in the manifestations, and so variable in its course and duration under any treatment, that I can only speak of my conviction, or belief, or, if you will, my "impression."

From Sir D. J. Corrigan, Bart., M.D., &c., Physician in Ordinary to the Queen in Ireland.

There has always appeared to me to be very unnecessary dispute carried on about different modes of treatment. I do not see why opiate treatment is to exclude blisters, &c., or *vice versa*. To adhere exclusively to any one line of remedies is no better than homeopathy.

From John T. Drennan, M.D., Senior Physician to the Belfast General Hospital.

There is nothing novel or imposing in my treatment of acute rheumatism. Blankets and cotton wadding as external application; moderate purgation, followed by the administration of the salts of potash (the bicarbonate and nitrate and the iodide of potassium), with opiates, or occasionally colchicum. Bark or quinine when the fever subsides, and the tongue becomes clear. I have little experience of blistering, except when the heart is affected, and this is certainly a very rare occurrence in my practice.

Of course the above medication is sometimes materially modified, *e. g.*, a man had diarrhea and delirium in conjunction with rheumatism, and was treated almost exclusively by opiates with apparently excellent effect.

I have no personal experience of bromide of potassium, actea, &c., &c.

From HENRY FREKE, M.D., Vice-President College of Physicians; Physician and Lecturer on Practice of Medicine Steevens' Hospital, Dublin.

My experience as to *the effects of treatment* in rheumatic fever being exclusively what has been asked for, I refrain from expressing any opinion on the pathology of that disease, or alluding to any change which I conceive may of late years be recognized in its character and type. The latter has, however, in my opinion, an important bearing on the question of treatment.

As of value in *contrasting* the effects of different lines of treatment, it may perhaps be advantageous to observe that my experience of rheumatism for the last four-and-twenty years has been chiefly confined to one class of individuals; to men who in occupation, habits, diet, clothing, &c., were in every respect similarly circumstanced. I allude to the Royal Irish Constabulary forces, as fine a body of men and as well dieted and clothed as any in the country.

Among the men of this force I have seen much rheumatic fever, and have employed almost every line of treatment that appeared to me to hold out a prospect of affording relief, including lemon juice, alkalies, bark, opiates, &c., I have not for many years employed general bleeding. The result of my experience is simply this:— I am strongly of opinion that although we can mitigate symptoms, we at present know of no means whereby we can cut short the disease, or with any approach to certainty reduce its duration. That there is no constancy to be recognized in the duration of the disease, but that either with or without treatment it *may* terminate in a fortnight or *may* last for two months. That if two patients in apparently similar circumstances, and presenting in every respect similar symptoms, be placed on the same line of treatment, one will occasionally recover in the course of twelve or fourteen days, while in the other the disease will frequently have a duration of seven or eight weeks, and that *whatever* be the line of treatment adopted.

From SAMUEL GORDON, M.D., Physician Richmond, Whitworth, and Hardwicke Hospitals; Lecturer on Practice of Physic Carmichael School of Medicine.

I have no doubt but that the alkaline and diaphoretic plan of treatment is of essential service in shortening the duration of rheumatic fever, and in lessening the probability of cardiac diseases. Even unaided, when carefully carried out it is of great value, but I attach much importance to the constitution of the patient affected, and to

the fact of it being a primary attack or otherwise. The preparation which I generally use is the combination of bicarbonate and citrate of potass—that is, I give very large doses of bicarbonate of potass in effervescence with lemon juice—giving a large excess of the bicarbonate.

If the patient be of a strong constitution and the attack a primary one, I usually add small doses of tartarized antimony with great advantage.[a] I think that when the depressing effect of antimony on the heart can be produced without vomiting, it proves most serviceable in averting cardiac complications. This was the plan of treatment usually adopted by the late Dr. Crampton, after he had given up the practice of venesection, and it was followed by great success. I need not say that it does not interfere with the use of opium but rather assists it. The use of opium I consider to be indicated in those cases in which the fibrous structures are much engaged, and when not contra-indicated I always prescribe it in the form of Dover's powder; but I never use the opium without having first tried the alkaline and diaphoretic plan for at least 24 hours.

In asthenic constitutions or when the attack is not primary I find great advantage from the addition of large doses of the iodide of potassium, combined in this as in all other cases in which I use it, with small doses of aromatic spirit of ammonia.

When there is much local distress I apply the vesicating collodion freely, and afterwards a warm solution of the bicarbonate of potass covered with French wadding and sheet gutta-percha.

With regard to the occurrence of endocarditis as indicated by endocardial murmur, I have long taught that the sign is most fallacious; the most severe, and most intractable cases of endocarditis which I have witnessed have been unaccompanied by any murmur (*vide Dublin Hospital Gazette*, April 1, 1857), and on the contrary I am satisfied that on account of the existence of an endocardial murmur, numbers of cases are recorded as endocarditis in which no inflammatory exudation has occurred.

From Dr. HAYDEN, Fellow and Censor King and Queen's College of Physicians; Physician to Mater Misericordiæ Hospital; Professor of Anatomy and Physiology in the Catholic University.

In acute rheumatism of the decidedly sthenic type, of which I have

[a] I remember, when a pupil of Dr. Robinson's at the Armagh County Infirmary, being impressed with the markedly beneficial effect of small doses of tartar emetic in sthenic cases of acute rheumatism, as here recommended by Dr. Gordon—(EDITOR).

seen comparatively few cases within the last six months, I have given full trial to the alkaline treatment.

My experience of it is, on the whole, favourable. It never fails to alleviate articular pain when pushed to the extent of rendering the urine alkaline in reaction. It should always, when not contra-indicated by other considerations, be pressed to this point, short of which it fails to give relief.

I am convinced, however, that the alkaline treatment, carried even to the point just indicated, does not confer certain immunity from cardiac complication, *e. g.*, a man aged forty-five, temperate, was admitted to hospital under my care on the 5th May, 1868, suffering from acute articular rheumatism, engaging most of the larger joints, but chiefly the left elbow; the cardiac sounds and action were normal. He was at once put under alkaline treatment as follows, viz.:—

℞. Acetat. Potass. ʒiv.
Bicarbon. ʒii.
Tinct. opii. ʒi.
Mist. Camphor ad. ℥viii.
St. coch. mag., 2nd q. horâ.

On the following day the urine was neutral, and the articular pains less severe, and on the next (May 8th) the urine was decidedly alkaline in reaction; but the patient was not so well. He had raved through the night, and was fidgety and somewhat incoherent; pupils contracted, and conjunctivæ injected. He likewise had cough with mucous expectoration, and complained of pain in the situation of the right nipple. Cardiac sounds normal, and action rapid; cardiac complication anticipated.

May 9.—*Mane;* patient rather pale; pupils much contracted; pulse 144, weak, and less full; respiration quick and embarrassed. He is incoherent, a loud double friction-sound audible over the entire precordium, but loudest and most distinctly of an "attrition" character at the apex; no increase in area of precordial dulness. Mercury was now substituted for the alkalies, and wine was given in doses of one ounce every second hour. He became rapidly worse, and died at 8 p.m., having had a fit of convulsions a short time previously. A *post mortem* examination was not permitted, but the area of precordial dulness was ascertained by percussion to be much extended; the precordium likewise projected.

Here then was an example of pericardiac, and likewise in all

probability of meningeal engagement in acute rheumatism, whilst the blood was actually saturated with alkali.

In the sub-acute form, or that in which the febrile symptoms are less decidedly acute and sthenic, the pulse under 100, the tongue but moderately coated, the skin not remarkably hot, and but barely moist, urine not copious, and exhibiting lithates in small proportion, articular pains not urgent, and swelling moderate—in cases of this character, of which latterly I have seen but very few, I have found the best treatment to consist in lemon-juice, wine, and sustenance. Cardiac complication is very rare.

During the last six months rheumatism of the low or asthenic type has been very prevalent in Dublin, and almost to the exclusion of the ordinary acute form of the disease. It has been characterized by severe pain of a singularly migratory character, in the fibrous structures of and in the vicinity of the larger joints, but rarely engaging the synovial membranes; indeed, in no instance in my experience, save those of the wrist-joint and hand. The latter joints have been in many instances so suddenly invaded that in the course of a single night they have become swollen, red, and acutely tender, there having been no appearance whatever of such engagement on the preceding day, and only the premonitory symptom of slight stiffness.

The heart or pericardium (frequently both) has been engaged in the great majority of these cases, and the treatment which I have found most efficacious has been opium in large doses (gr. ii. of the watery extract twice or thrice daily), wine, porter, and animal food. I have already published a collection of these cases.—(See *British Medical Journal* of March 27th and April 3rd, 1869.)

From Henry H. Head, M.D., M.R.I.A.; Fellow of the College of Physicians; Physician to the Adelaide Hospital.

The success that has attended what may be termed the protective treatment of acute rheumatism, without medication, has led me to reconsider the opinions I had previously formed on the treatment of the disease. The experience of the last four years in the Adelaide Hospital has convinced me that every case of rheumatic fever should be treated strictly in accordance with the rules laid down by those who have adopted the "blanketing" system, and that the medicinal treatment, properly so called, should be added to it. It is difficult, if not impossible, to compare justly the success of the different methods of treatment which have been

recommended, unless similar cases be similarly circumstanced with regard to the non-medicinal portion of their management, viz., temperature, protection from cold, rest, diet, &c. It cannot be denied that in hospitals too little attention is generally paid to careful nursing, and that patients are allowed to expose themselves to cold air, when their bodies are bathed in profuse perspiration, such exposure being the frequent cause of metastasis and cardiac inflammations.

The result of my own observations has been decidedly in favour of the treatment by alkalies and their salts, in combination with the vegetable acids, in cases where the symptoms are very acute, characterized by quick, hard pulse, high temperature, and acid secretions, and where the constitution of the patient has been hitherto good; and I think I can assert, with perfect confidence, that where this course has been pursued, in combination with careful protection, cardiac complications have been extremely rare in cases where there was undoubted evidence that such lesion did not previously exist. There is, however, a good deal of difficulty in deciding this question, as the fatigue and exposure to which patients are subjected whilst being conveyed to hospital frequently cause an attack of endocarditis, which may undoubtedly exist without giving rise in its early stage to the usual physical signs, which only become apparent when lymph is effused. Two cases have recently come under my notice, in which the endocardial murmur was not observed, although carefully watched for, until the convalescence of the patient was considerably advanced, and at least twelve days had elapsed after the occurrence of symptoms, which led me to fear the existence of endocarditis, and which occurred a day or two after the patient's admission into hospital.

In the case of patients who have suffered from repeated attacks of rheumatism, when the character of the fever is low, or the constitution previously bad, the alkaline treatment (if adopted at all) should be carried out with great caution, and should be combined or very soon followed by the use of quinine or bark.

Where the joints affected are numerous and the pain is very acute, I have found very great relief afforded by the blistering method suggested by Dr. Herbert Davies; but although the alleviation of suffering is considerable, I do not consider that this treatment shortens the duration of the attack. It is, in fact, impossible to lay down any one rule suitable in all instances, and whatever may be the theory regarding the nature of the disease,

there can be little doubt that each case should be treated according to its own peculiar conditions.

From Alfred Hudson, M.D., Dub.; M.R.I.A.; Fellow College of Physicians; Physician to the Meath Hospital.

My strong impression is that the early and free exhibition of the alkalies or their neutral salts is prophylactic of cardiac affections: I even believe that they are the best curative measure which can be employed when endocarditis has actually supervened.

In several instances I have known an endocardial murmur which, commencing at an early period, had persisted throughout the illness, to disappear gradually under the influence of large doses of the neutral salts, more especially of the acetate and nitrate of potash. One of these cases was so striking as to be worthy of mention.

A gentleman, aged twenty-five, complained of tightness and pain in the precordial region, with a well-marked endocardial murmur at the apex about the end of the first week of rheumatic fever.

This murmur continued unchanged in seat or character during the illness and during his convalescence.

From the first appearance of the murmur I pursued the alkaline treatment steadily and continuously, giving a drachm of nitrate of potash and six drachms of bicarbonate of soda daily for many weeks.

Ultimately the murmur entirely disappeared; and on the patient's death long afterwards, of a different disease, I had the satisfaction of learning that the heart was found to be perfectly healthy.

From Dr. John Hughes, Physician to Mater Misericordiæ Hospital.

I have caused a list of the cases of rheumatic fever admitted into the Mater Misericordiæ Hospital under my care within the last three years to be made out. On referring to it I find 27 males and 19 females were under my care.

With 3 exceptions (one girl, aged 15, and two boys, aged 11 and 13 respectively) all were beyond the age of puberty.

38 were cases of acute rheumatic fever.

5 subacute.

3 were cases of relapse.

The great majority were admitted during the primary attack,

and some few during the second or even third attack, and with well-marked symptoms of cardiac disease. But in *no instance did cardiac symptoms occur during treatment in the hospital.*

All recovered from the fever; and the period of sojourn in hospital varied from 5 to 38 days, the average of each patient's stay being about 15 days.

The immunity those patients (who were admitted during their primary attack) enjoyed from cardiac complication I attribute more to their mature age than to any other circumstance, for I have very rarely known a rheumatic patient under the age of puberty escape from heart disease, no matter what treatment was adopted; and I have known the symptoms and physical signs of endocarditis to have *preceded* the affection of the joints in young persons. My treatment has invariably been the quino-alkaline, with blisters to the joints to relieve pain, and a fair amount of nutritious diet; very rarely stimulants—opium combined with the mixture in small doses, or as a sedative at night to procure sleep.

I think the treatment I have pursued, as stated, tended materially to mitigate the severity of the disease, to allay pain, and render the convalescence short; and I should be sorry to omit it in any case entrusted to my care, or change it for any other proposed as yet.

CASES of RHEUMATIC FEVER under Dr. Hughes during years 1865, '66, '67, and '68.

NAME	Age	Admission	A.D.	Discharge	A.D.	No. of Days in Hospital	Result	
Mary Leonard, -	50	April 7	65	April 24	65	17	Cured	
Catherine Gelmor, -	15	Nov. 7	,,	Jan. 15	66	69	,,	Kept in hospital after recovery — period not ascertained.
Mary Henry, -	40	,, 15	,,	Dec. 22	65	37	,,	
James Niells, -	25	,, 16	,,	Nov. 27	,,	11	,,	
Michael Doyle, -	25	,, 21	,,	,, 26	,,	5	,,	
Michael Hyland, -	21	,, 27	,,	Dec. 20	,,	23	,,	
Patrick Cranny, -	36	Mar. 5	66	Mar. 22	66	17	,,	
Michael M'Donnell,	52	April 11	,,	April 24	,,	13	,,	
Eliza Byrne, - -	24	,, 13	,,	,, 13	,,	18	,,	
Patrick Calavan, -	34	,, 23	,,	May 1	,,	8	,,	
Philip M'Ardle, -	44	July 4	,,	July 30	,,	26	,,	
Catherine Carroll, -	45	,, 16	,,	,, 23	,,	7	,,	
Anne Horan, -	40	,, 17	,,	,, 23	,,	6	,,	
Margaret Tool, -	16	,, 23	,,	Aug. 30	,,	38	,,	
John Hayden, -	17	Nov. 19	,,	Dec. 2	,,	13	,,	Sub-acute.
Thompson Neill, -	33	,, 22	,,	,, 22	,,	30	,,	
John Cunningham, -	28	,, 23	,,	Nov. 27	,,	4	,,	Relapse.
Mary Breen, -	50	,, 30	,,	Dec. 5	,,	5	,,	Sub-acute.
Brian Hynes, -	25	Dec. 5	,,	,, 25	,,	20	,,	
John Hayden, -	17	,, 5	,,	,, 19	,,	14	,,	Relapse.
Catherine Dowd, -	14	,, 13	,,	, 26	,,	13	,,	

CASES of RHEUMATIC FEVER—*Continued.*

NAME.	Age	Admission	A.D.	Discharge	A.D.	No. of Days in Hospital	Result	
Robert Fitzgerald,	23	Dec. 21	66	Dec. 28	66	7	Cured	
Bryan Hynes,	25	„ 31	„	Jan. 27	67	17	„	Relapse.
Joseph Turner,	13	Feb. 11	67	Feb. 24	„	13	„	
Mary Kelly,	22	„ 19	„	Mar. 15	„	24	„	Sub-acute.
Patrick M'Garry,	23	Mar. 13	„	„ 25	„	12	„	Sub-acute.
Patrick Hughes,	23	April 1	„	May 1	„	30	„	
Michael Pigot,	36	„ 11	„	April 21	„	10	„	
Mary M'Gowan,	64	„ 11	„	„ 27	„	16	„	
Nora Seery,	19	„ 13	„	„ 19	„	6	„	
Patrick M'Garry,	22	„ 22	„	„ 30	„	8	„	Sub-acute.
Mary Mooney,	22	„ 29	„	May 11	„	12	„	
Anne Fannon,	27	May 15	„	„ 27	„	12	„	
Eliza Murphy,	17	July 23	„	Aug. 5	„	13	„	
Mary Owen,	17	Nov. 16	„	Nov. 21	„	5	„	
Laurence Geoghegan	40	Feb. 10	68	Mar. 5	68	24	„	
John Lynch,	38	Mar. 23	„	„ 25	„	33	„	
James Levin,	27	April 20	„	April 30	„	10	„	
Eliza Westlake,	27	„ 23	„	May 9	„	16	„	
George Carty,	18	May 22	„	„ 29	„	7	„	
George Ryan,	11	„ 29	„	June 8	„	10	„	
John Long,	26	June 3	„	„ 19	„	16	„	
Michael Brophy,	25	July 30	„	Aug. 14	„	15	„	
Ellen Carroll,	40	Nov. 13	„	Dec. 7	„	24	„	
Catherine Long,	52	Dec. 9	„	Jan. 9	„	31	„	
John Busmit,	24	Mar. 1	69	Mar. 9	„	9	„	

From HENRY KENNEDY, M.B. Dub.; F.K. & Q.C.P.; Physician to Sir P. Dun's Hospital, and to Cork-street Fever Hospital.

For some years past I have had the greatest confidence in what is known as the alkaline treatment laid down by Drs. Garrod and Fuller for acute rheumatic fever. Unless I disbelieve my senses I cannot doubt its great value in shortening the duration of this disease, for I recollect well when six and eight weeks were the common periods for a patient to be in hospital when labouring under this affection. Now, unless some complication arise, such as pericarditis, and this is, of course, exceptional, three weeks is about the time—that is, reckoning from the day the patient was submitted to the treatment. I have seen so many instances where patients have remained at home for ten to fourteen days, and yet no amendment had occurred, though they were necessarily confined to bed, that I cannot doubt the opinions lately advanced in London are erroneous, unless, indeed, we suppose the disease met in that city is different from

what it is in Dublin, and this it is hard to do. Whilst, however, I thus speak in favour of the alkaline treatment, I do not limit myself entirely to it. In by far the majority of cases the disease is attended by very severe suffering. Hence I have been in the habit of joining the anodyne to the alkaline treatment, and, I believe, with the best results. The former plan has been long known and acted on, but I am not sure that I have read in any work of the combination of the two plans, which appears to me, at least with our present knowledge, the best which can be adopted. In these remarks I have purposely omitted what may be called the minor points of treatment.

From ROBERT LAW, M.D.; Professor of the Institutes of Medicine in the School of Physic; Physician to Sir P. Dun's Hospital.

Professor Law's opinion, as expressed in the following extract from a paper published by him in this Journal in May, 1864, remains quite unchanged by later experience:—

"In conclusion, I would recapitulate the treatment I have pursued in acute rheumatism, as consisting in a moderate venesection, almost never exceeding eight ounces, and seldom requiring to be repeated; and in the exhibition of colchicum, either in the form of the tincture or the wine of the seeds, of which preparation I do not exceed a drachm in a six-ounce mixture, or the acetous extract in grain doses three or four times daily. When I consider it necessary to exhibit an aperient, which I avoid as much as possible in such cases, from the pain of the motion consequent upon the operation of the medicine, I direct the following mixture:—Tincture of the seeds of colchicum, one drachm; tincture of senna, half an ounce; sulphate of magnesia, six drachms; peppermint water to six ounces. I have found considerable advantage and ease to the patient from combining opium largely with the colchicum. I have already alluded to the fact of how very unsusceptible of the influence of opium persons affected with acute rheumatism are; it is quite remarkable what an amount of it they will bear without being narcotized. I constantly direct a drachm of the tincture of the seeds of colchicum, and a drachm of liquor opii sedativus, in a six-ounce mixture; or a grain of the acetous extract of colchicum and a grain of the watery extract of opium in a pill, three times, or oftener, in the day. Thus have I combined Dr. Corrigan's narcotic treatment of the disease with my own. The local application to the inflamed joints which I have employed with most advantage is the tincture of iodine, and especially where there is effusion into the joints, which, in most cases, disappears speedily under

its use. I have generally observed, where the pericardium or endocardium is about to be affected, there is, in general, previously an excited action of the organ, in which case I add digitalis either to the mixture or pill. And when an attrition murmur, or a valvular abnormal sound, indicates pericarditis, or endocarditis, I then combine mercury with the other medicines in the following formula:—Acetous extract of colchicum, four grains; calomel, three grains; watery extract of opium, two grains; powdered digitalis, one grain. To be made into four pills; one to be taken every third hour. I also direct a blister to be applied to the precordial region, and the blistered surface to be dressed with mercurial ointment, in order to bring the system speedily under the influence of this medicine—convinced as I am of its power to effect the absorption of the effused lymph, whether deposited on the pericardium; or on the surface, or in the substance, whether superficially or interstitially in the valves. This is the stage of the disease when medicine can alone cure it.

"To return to our treatment of rheumatism. When the acute symptoms have passed away, and all fever gone, we now conclude our treatment with bark and hydriodate of potash, or quinine; and when stiffness of joints alone remains, with warm baths. We have ever found that, as long as the disease retains any of its acute character, so long will no benefit be derived from the warm bath; but so far from it the patient generally complains that his pains had been much worse. So that in doubtful cases the effects of the warm bath have served me as as a test of the disease as to its having passed from the acute to the chronic stage.

"We have already observed we gave a fair trial to every other mode of treating the disease, viz., the alkaline treatment, the citric acid treatment, the treatment with opium freely exhibited, the treatment with colchicum alone, and the treatment with bark with hydriodate of potash, and none has approached the plan we have recommended in the shortness of time it required, nor has any been more certain in its results. And time and ample experience have established its pretensions with us."

From Robert D. Lyons, M.B. Dub.; Physician Richmond, Whitworth, and Hardwicke Hospitals; Professor of Medicine and Pathology Catholic University.

Dr. Lyons has had a large experience in the treatment of rheumatic fever for some years past in his clinique at Jervis-street Hospital, and subsequently in the Hospitals of the House of Industry. In both hospital and private cases he has, as we are informed, given trial to all the principal plans of treatment which have had any authority to recommend them, and as the result of

observations conducted with care he has come to the mature conviction, that with certain adjuncts in the way of clinical manipulation of the affected joints, the alkaline plan of treatment offers advantages in which it is not approached by any other method of dealing with the malady. Dr. Lyons has, in fact, adopted for some five years past a settled mode of treatment of rheumatic fever, the details and principles of which may be thus briefly summarized:—

The patient is placed in a flannel jacket, and between blankets, the sheets being removed from his bed. The joints affected are assiduously poulticed with a mash of camomile flowers and poppy heads, reduced to a soft state by being simmered for from one to two hours. These poultices are removed and replaced by fresh ones at intervals of three or four hours, and thus this soothing application is kept up "hot and hot," so long as pain and swelling continue to be complained of, and so marked and immediate is the relief thus afforded that the patients will be found frequently to ask urgently for a fresh poultice to a joint which is becoming affected. To procure sleep, and to ease and tranquillize the patient in this very painful malady, from one quarter to half a grain, or even a grain dose of opium is given every third, fourth, or sixth hour, according to the age of the patient, and the distress and urgency of the symptoms.

The following alkaline mixture is next prescribed, the proportions and the vehicle of exhibition for which are altered according to the state of the patient's stomach. In eight ounces of the infusion of gentian, cascarilla, or any of the light bitters, half an ounce of the bicarbonate, two drachms of the acetate, and two drachms of the nitrate of potash, are ordered with half an ounce of any ordinary flavoring syrup. Of this mixture one table-spoonful is administered every third hour, except when the patient is asleep.

The diet is restricted to milk and any simple farinaceous food; and for drink, soda or kali water, or lithia waters in effervesence are allowed *ad libitum*.

Dr. Lyons' standing orders to the clinical clerks are, to examine and record the state of the heart and its membranes on the patient's admission. When, should cardiac complication exist, or should it be subsequently developed, *which rarely happens*, when this plan of treatment has been put in operation sufficiently early, relays of leeches and poultices are placed over the heart; but mercury is not

now exhibited in Dr. Lyons' practice, except in the most rare and exceptional instances.

When as occasionally, though in his experience but very uncommonly, it may happen that through squeamishness of stomach the alkaline mixture just described is not well borne, Dr. Lyons has recourse to the salts of lithia, given in distilled water with a little of the syrup of orange flowers.

The bowels are regulated by enemata, or a mild rhubarb aperient, with magnesia ustä; but under no circumstances is the patient allowed to get out of bed, and he is at all times supplied with an urinal.

Tepid sponging, and the frequent use of dry warm (Turkish) towels are found to give great relief when the sweat is excessive. It has not been found necessary, in Dr. Lyons' experience, to leech or blister the joints, and to this latter procedure he avows an open and uncompromising hostility.

For this plan of treatment, as above detailed, and which has been pursued more persistently by Dr. Lyons than perhaps by any other of our Irish hospital physicians, he claims no originality whatever, but he avers the following conclusions in its favour:—

1. It gives immediate ease by the local applications, and the internal employment of narcotics. The patient thus passes with a minimum of suffering through an otherwise extremely painful disease, and often after the first day or two the patient complains of absolutely no pain or distress whatever.

2. The local application of heat, moisture, and narcotics relax the fibrous textures invaded by the *materies morbi*, urate of soda, or whatever other pathological product it may be, while the said *materies morbi* is not repelled from external parts, where, though the cause of pain, it is rarely if ever capable of producing ultimate serious organic mischief, as it will surely tend to do, if driven upon internal organs.

3. The alkali thrown liberally into the system, affords, when circulated in the blood, a ready solvent for the urate, while the action of the nitrate and the acetate of potash promotes free elimination through the safest channel of exit from the body, that of the urinary excretion.

4. This plan of treatment, when fully and carefully carried out, diminishes the duration of the disease, and, in Dr. Lyons' opinion, lessens in a very high degree the liability to cardiac complication. So much is this the case that in but an exceed-

ingly rare number of instances has it happened that a patient admitted without cardiac complication has developed it subsequently in Dr. Lyons' clinique. Furthermore, his experience has shown him that in instances in which cardiac murmur was present on admission of the patient the persistent employment of the alkaline plan with the adjuncts above detailed has had the result of removing the cause of the murmur, possibly in such instances constituted by limited deposits on valves not otherwise damaged.

With the experience of five years in hospital and in private cases, and with, as he avers, the happiest results as to diminution of suffering, shortening of the duration of the malady, an undeniable lessening of the tendency to cardiac complication, Dr. Lyons avows himself a warm advocate of the alkaline and narcotic plan of treatment above detailed. His results of treatment have before now been brought to the notice of the profession, and have been witnessed by many visitors to his clinique.

From WILLIAM MOORE, M.D., Dub. King's Professor of the Practice of Medicine; Professor of Clinical Medicine Sir P. Dun's Hospital.

With respect to the treatment of "Acute Rheumatism" Dr. Moore cannot fall in with the "do-nothing" system. He is an advocate for the alkaline treatment, and after having given those in use, individually, repeated trials, he is disposed to place most reliance on the acetate or bicarbonate of potash, especially the latter, in doses varying from half a drachm to one drachm every fourth hour; having first relieved the chylopoietic viscera by a mercurial purgative. He has found this treatment, combined with an opiate at bed time, *fluid* diet, and keeping up a general high temperature, particularly over the affected joints (which is best done by wrapping them in raw cotton covered with oiled silk), very satisfactory.

Dr. Moore states that although not armed with statistics, his experience leads him to conclude that where the above treatment is steadily carried out, not only is the duration of the disease shortened, but endo and pericardial complications are of less frequent occurrence.

From DENIS C. O'CONNOR, M.B., Professor of Practice of Physic Queen's College, Cork, and Physician to Mercy Hospital.

We may divide cases of rheumatism into three classes—First, those occurring in persons of feeble health or weak constitution, in which

may be included the majority of females; children and young persons in the period of growth, no matter how robust they may appear; second, those who were in strong health and of a robust constitution at the time of seizure; a third form may be found, in those who, originally plethoric, have become weakened by protracted diseases. In all cases I give for the first few days as much of a mercurial as may be administered, without affecting the gums or weakening the patient's strength. In the first class, I give nutriment and diaphoretics, and after a few days large doses of quinine and an occasional sedative at night combined with colchicum. In this and the third-class I take special care to adopt no treatment which could give a shock to the system, and perhaps weaken the too feeble determination to the cutaneous surface. Such cases I had to treat in large numbers while I was physician to the workhouse. For the same reason that I am induced to give tonics, stimulants, and nutriment to the feeble to assist the eliminative process which nature is carrying forward, I am disposed to adopt a lowering treatment in the plethoric to prevent secondary complications, by congestions in various organs, which at the same time would promote instead of diminishing the action of the cutaneous exhalants, so necessary a part of the cure in these cases. Every practical physician knows the details of the treatment necessary for attainig this object. In all cases I give more or less of the alkaline carbonate but not in such quantities as recommended by Dr. Fuller, nor have I ever been able to bring myself to rely on them altogether. The statements I have seen as to pericarditis occurring in every fifth case, does not correspond with my experience. This form of heart disease is much more rare than here stated, and more rare than endocarditis, with reference to which I suspect we are liable to error especially in hospital practice. Although I never fail to examine the sounds of the heart daily in acute rheumatism, still I have dismissed from hospital as cured persons whom I met in months perhaps years afterwards, suffering from valvular heart disease. When investigating the previous history of persons affected with chronic valvular disease, I find that almost invariably they refer to some previous attack of rheumatism, but never say they were treated for or cautioned about heart disease. From these facts I infer that a very slight form of inflammation, attended with little constitutional disturbance, and a very slight exudation may supervene at the termination of rheumatism, and the spoiling of the valves be

only of slow subsequent growth. The last case which I had under my care was that of a young lad, about fourteen years of age, who had been three weeks going out before any symptom of heart affection manifested itself after a prolonged walk into the country. My experience leads me to say that both rheumatism and (consequently) heart affection are most prevalent in the young. But watching other cases for many years I can bear testimony to a perfect cure, in many instances, which I think never occurs to persons affected at a latter period of life.

From JOHN POPHAM, M.B., Physician Cork North Infirmary.

1. *General and Local Bleeding.*—My treatment in this respect has become greatly modified since I commenced practice, some quarter of a century ago. At that time I used to meet cases of a high sthenic type, which sustained depletion very well, and were treated generally at the outset of the disease by one, or at farthest, two, full bleedings, certainly with visible benefit. The cases were then brought to a successful termination by the use of colchicum and magnesia, with or without saline aperients. My recollections of those cases are very favourable, and cardiac lesions did not seem more frequent; indeed, in my opinion less frequent, than at the present day. I must, however, make an exception as regards cases treated by frequently repeated venesections, some of which I saw in foreign hospitals, and which impressed me with the conviction of the *nimia medici diligentia*, from the tardy convalescence, and the frequent complication with heart disease. For many years I have not bled in acute rheumatism, nor have I in truth seen cases in which I thought it indispensable, but I do not mean to say that it is a practice which ought absolutely to be removed from the therapeutics of this disease. Bearing in memory my former experience, I can only explain the difference in the present day of the treatment by a change of type in the disease. I seldom employ local bleeding in the pains and swelling of the joints, as I have thought it tended to produce cardiac determination, but when this organ became seriously involved I always found local bleeding beneficial.

2. *Mercury.*—I have never been an advocate for mercury in this disease, when carried out with a view to its specific effect. In the acute stages it is difficult to salivate patients, the medicine seeming to remain latent, but when the fever becomes abated, then salivation is apt to set in with sudden force and protract the recovery, an

occurrence very undesirable at the close of an ailment which draws so severely upon the strength. As an occasional alteration this medicine is of value. But when the disease is in a kind of transition stage, the poison seeming in a state of uncertainty where it may fasten, mercury seems unserviceable, and augmentative of the roving instability of the tonic agent. It is, however, quite a different thing when the disease fixes itself, either in the heart, or some other vital organ. Then we can only depend with safety on local depletion, and calomel and opium should be rapidly administered, making at the same time an effort to relieve the internal mischief by sedulous counter-irritation to the distant joints. I am aware that this treatment is opposed to the opinions of some judicious physicians, but as yet I have not seen sufficient reason to change these views.

3. *Alkalies.*—I have of late years depended very much on these medicines, and my conviction of their value is every day becoming more corroborated by experience. I think, however, that they require to be used with judicious caution, every case not being suitable for them. As a rule I believe that their value is almost in a direct ratio with the sthenic nature of the disease. The higher the fever, the stronger the pulse, the severer the local pains, the deeper the acidity of the secretions, the more serviceable we shall generally find the alkaline treatment.

4. *Nitrate of Potash.*—I have seen numerous rapid recoveries from this medicine used in moderate doses, such as one or two drachms per day; given in larger doses it does not seem to agree so well. There are, however, many cases which resist its effects, and the inference seems borne out that if its good effects be not soon perceptible, it is better not to persist in its use.

5. *Lemon Juice.*—I have witnessed some very rapid cures from the use of this agent, and in other instances, it has failed to produce a durable effect, so that I regard it as uncertain. It seems of more benefit in the more asthenic than the sthenic cases, and in the more apyretic than the pyretic cases. It suits, therefore, examples of a low type, and feeble constitution, where there is not much local swelling, but rather darting, flying pains. I am, however, still undecided about its degree of merit. It is necessary in such instances as those assigned, to supplement its use with good beef-tea and plenty of it.

6. *Opiates.*—I never trust the treatment of acute rheumatism to opiates per se, though, as auxiliaries, we can hardly estimate their

value too highly. Exhibited at bed-time in large doses, they are beneficial both as sedatives of pain, and as enabling the constitution to tide over safely the period of early morning when the disease shows its most restless phases. I have reason to speak with confidence of their value in combination with alkalies, or nitrate of potash. For instance, 3 to 5 grains of Dover's Powder with 15 grains or a scruple of bicarbonate of potash, or 20 grains of nitre, given from 4 to 6 times per day have, by meeting a double object, promptly cured the disease.

7. *The Let-Alone System.*—I have not much experience of this method, but such as I have is not favourable to it. Most physicians meet with cases which have been left to themselves and terminated in the chronic state of the ailment. In taking the duration of a case solely as a test we are apt to make mistakes, and a broad margin should be left for those various changes which disturb and complicate statistics.

From WILLIAM STOKES, M.D., D.C.L. Oxon.; Regius Professor of Physic in the University of Dublin; Physician to the Meath Hospital.

I do not know of any disease that more unmistakeably shows the change of type than rheumatic fever. It was a very different disease thirty or thirty-five years ago than what it is now. It was marked by a high inflammatory fever, a burning skin, a bounding and resisting pulse, "inviting the lancet," strong action of the heart, intense local irritation, and extreme pain. Our practice never was bleeding on the *coup sur coup* system of Bouillaud, but we found that one bleeding in the early periods was well borne, and that patients so treated made better and more speedy convalescences than those who were not bled. The blood was always buffed and cupped in a high degree. Local bleeding by leeches was practised, following the arthritis from joint to joint with a moderate number of leeches. When the internal organs were attacked the inflammation was most acute. We have had nothing like it for years.

The whole character of rheumatic fever in Dublin for many years has been changed, and, as regards the constitutional and the local symptoms, it is mainly of an asthenic type. Some of the cases, at an early period, have a tendency to pyemia. They show purulent sudamina, feebleness of circulation, bed sores, and commonly exhibit various forms of anemic murmur in the heart and arteries

in the advanced stages. The convalescence is slow and unsatisfactory, and in many of them, even with pericarditis, such was the debility of the heart, that wine had to be used with freedom. It often removed the irregularity of the pulse.

I have long disbelieved in the efficacy of any of the proposed specific treatments for acute rheumatism or rheumatic fever, including mercury, opium in large doses, bark, colchicum, alkalies, and acids. The disease, like continued fever, will run its course, and the principles of treatment are the same in both cases. We are to support the strength and alleviate pain, and employ tonics in the advanced stages.

Some of the most protracted convalescences I have ever seen were in cases in which, as was the practice long ago, the patients were, at an early period, brought under the influence of mercury. I conceive that Dr. Gull and his colleague have done good service to practical medicine in bringing forward observations on this subject.

REPORT ON OBSTETRIC MEDICINE AND SURGERY.

By George H. Kidd, F.R.C.S.I. ; Obstetric Surgeon to the Coombe Lying-in Hospital ; Hon. Sec. Obstetrical Society of Ireland.

TEDIOUS AND DIFFICULT LABOUR.

There is no problem in practical midwifery of more importance, or, perhaps, of such importance, as to know when to interfere and afford assistance in cases of tedious labour. The often-repeated maxim, that "meddlesome midwifery is bad," and that "the powers of nature should be trusted," have now happily lost their hold over practitioners, and it has become the rule to afford early assistance rather than encounter the dangers of delay. But while it is agreed that the onset of the dangerous symptoms described by authors under the terms "powerless labour," "exhaustion," "cessation of labour pains," &c., &c., should not be waited for, it is incumbent on us not to expose either mother or child to the risk of operative interference without necessity, and the problem to be solved in each case is, at what period does the necessity arise?

An observation of Dr. J. Braxton Hicks[a] will afford great

[a] On the condition of the uterus in obstructed labour, and an inquiry as to what is intended by the terms, "exhaustion of labour pains," "powerless labour," and "exhaustion." By J. Braxton Hicks, M.D., F.R.S., &c.; Trans. Obstet. Soc. of London, Vol. ix., p. 207.

assistance in determining this problem. Dr. Hicks finds that in the course of a tedious labour the pains may cease under two conditions, which must be discriminated for the determination of the proper mode of treatment.

The first of these conditions is a state of quiescence, in which the uterus is simply resting quietly. During it the pulse is not raised, and there are no untoward symptoms beyond languor, and possibly faintness. After a time the labour pains return, and delivery may be accomplished naturally, and with safety to both mother and child.

The second condition is one of continuous action, and by whatever cause the labour be obstructed, whether by contractions, &c., of the softer, or of the bony parts, or by the irregular spasmodic action of the uterus itself, sooner or later the rhythmical pains merge into this continuous action till it alone remains. This condition Dr. Hicks believes to be the precursor to the symptoms of "powerless labour," "exhaustion," &c., and as soon as it commences, those symptoms gradually follow which have been held as indicative of the necessity for artificial delivery, such as the rise of the pulse, dry tongue, hot skin, &c.; and in those cases where, after hard labour, these symptoms have occurred the uterus will be found in a state of permanent action, with the rare exception of those where the uterus was ruptured, or violent mental emotion has subjugated its power. This continuous action persists to the very verge of dissolution. In one case of arm presentation, where labour had lasted a week, and three attempts to turn had been made, the patient, when Dr. Hicks saw her, being scarcely able to articulate, and having her tongue very brown, and pulse 150, no change from the excessive rigidity took place, even under the influence of chloroform, till a few moments before death. So hard was the uterus in all its parts that it bore no resemblance to living contracting tissues. In this state Dr. Hicks believes the uterus becomes gradually irritated, and continuous action is set up so that though the pains may seem to have ceased, and may only occur at irregular intervals, it is really more active than before, tightly compressing the child, and falling into the inequalities of its form, whereby the child is prevented from escaping, every indentation of the uterus forming, as it were, a ledge past which it is difficult to draw it, or to pass the hand if we desire to turn. Once this condition is established it is rare that the rhythmical pains ever occur with such force as to expel the child, and sooner or later interference becomes necessary.

To distinguish these two conditions of quiescence and continuous action it is seldom necessary to do more than examine the state of the uterus through the abdominal parietes; but occasionally it may be necessary to pass the hand within, past the presenting part. In the first case the uterine walls are lax and flabby, and the fetus is readily detected within, floating about with ease. In the other the uterus is hard and firm, and tightly moulded to the fetus, which cannot be swayed about. This want of mobility of the fetus is a distinguishing sign of the contracted state of the uterus. It occasionally happens that the fetus, especially when dead, is rolled up into a globular form, having lost the ovoid. Percussion affords another sign. If the uterus be contracted there will be resonance up to the margin of the hard body. If it be lax, the dulness will extend beyond the edge of the hard body.

Dr. Hicks attributes this contracted state to exhaustion of the nervous power rather than to direct pressure on the soft parts of the mother, and he makes the following observations as to the treatment to be adopted, both when the uterus is relaxed and when it is contracted:—

"A proper consideration of these two forms of deficiency of the rhythmical uterine action enables us to decide upon the proper mode of treatment with great distinctness, and it will materially help us also to do so at an early period, earlier, indeed, than generally has been held possible.

"If it is true, as already stated, that when the clamping continuous action of the uterus has once begun, there is very rarely any hope that the rhythmical expulsive pains will again preponderate to such an extent as to expel the fœtus at least unaided; and as we know that the action of the ergot of rye is to cause this very action, if it fail to cause expulsive pains, and to increase it when present, it is clear that the administration of this drug should be avoided in this state of affairs. I am not prepared to affirm that it may not, in some few cases, again rouse the expulsive pains sufficiently to expel the fœtus, but its use must under the circumstances be attended with a degree of risk such as it seems very undesirable to incur.

"But if there be this objection to the use of secale and other uterine stimuli, there is, on the other hand, a clear and distinct indication in favour of operative interference; the mode in which it is carried out of course depending on the nature of the case, but that which is accomplished by means of traction would suggest itself as being the best, inasmuch as it would enable the fœtus to pass through the uterine grasp, and to distend the contracted portions.

"An example of this class of cases is not infrequently found in a primipara, in whom notwithstanding uterine pains have continued for a long time, no progress has been made. On examination it will be found that although the head of the child have escaped the os uteri, the shoulders are caught either by the os uteri itself, or by a contraction a little way above it. When the detention has continued a certain time, the rhythmical pains gradually merge into the continuous form, and then it is very rarely that the fœtus is naturally expelled, particularly so if, secale having been given, it has failed to extrude it. Then, unless timely assistance be given, the fœtal life is extinguished, symptoms of irritation, then of exhaustion come on, followed by putrid decomposition of the fœtus, and the patient sooner or later succumbs. Thus a comparatively small obstruction occurring, delivery by natural powers is made nearly impossible by the grasping uterine contraction. It matters not, however, in what part of the parturient passage the hindrance is situated, its position only affects the period and rapidity of the occurrence of the serious symptoms.

There is no doubt but that in some cases where the case is taken early, the continuous action yields to the influence of chloroform, but inasmuch as this remedy also, in a certain degree, diminishes the expulsive pains, it is by no means certain that its use will be succeeded by progress; on the contrary, it may be said that, with the exception of contracted states of the os uteri, the cases are rare in which expulsion of the child would occur after its use in the circumstances just narrated.

"From a consideration of the above circumstances we may deduce the following as our rule both as to the time and the mode of our rendering assistance,[a] namely:—

"If, on placing the hand on the uterus externally we find it firmly contracted around the fœtus between the pains (the observation of this point being made over a sufficient period); or if there being no pains we watch for some time and find no relaxation, we may be nearly certain that further waiting will effect no good; and therefore, in other words, it is worse than useless to postpone assistance any longer, and this rule will be still more distinct if we find the pulse rising, the countenance anxious, and much distress felt in the uterus.

"If on the contrary we find the uterus lax, then we may safely wait as long as the pulse be quiet; to this, perhaps, an exception may be taken, where in certain cases the head may be firmly impacted in the cavity of pelvis by the pains which preceded the state of relaxation. In such case we might wait safely if we could push back the head a slight

[a] It is by no means here intended to be implied that the forceps are not to be applied in cases where no continuous action has occurred; it is only meant that when it has occurred our line of practice is quite clear; neither is it affirmed that we are to wait always till the continuous action has begun.

degree so as to remove the persistent pressure on the maternal soft parts, being of course ready to employ artificial aid if the recurring pains were not sufficient; otherwise, if much time elapse, it will be necessary to interfere to rouse the pains or draw the head through.

"Should the pulse rise, or vary much, or other general symptoms arise when the uterus is relaxed for some time, it is more than probable that some lesion has occurred, or some unusual condition has interfered, such as an attack of an exanthem, pneumonia, &c., for the cases are rare indeed in which "powerless labour" in Dr. Churchill's sense is present without the condition of continuous contraction having preceded it, if we except that state which is induced by violent mental emotions or rupture.

"It has been given as a rule by some authors that abstraction of the child should not be done unless there are pains present to assist the withdrawal of the child, secure the expulsion of placenta, and keep the uterus well contracted after. To a certain extent this is a safe rule, but it is one which is indefinite, because the 'pains' may be absent, and yet the uterus very active, over-active indeed, as has already been pointed out, and even if it be not, yet it is found that when the head is drawn down the uterus does contract after.

"What are the explanations for these facts?

"Where there is the continuous action we may safely draw down the fœtus with proper rapidity without fear. The uterus contracts firmly on the receding contents, and even sometimes the rhythmical pains again are re-excited, and the placenta is expelled naturally, the uterus remaining well contracted afterwards. Sometimes the uterus continues so firmly contracted after the withdrawal of the fœtus, that the placenta is held as firmly in its grasp as the fœtus was, so that it has to be removed by artificial aid.

"But where the uterine walls are relaxed, it doubtless is the best plan to endeavour to rouse the uterine action by oxytoxics, such as secale, &c., but it not infrequently happens that when the head is drawn down to the outlet reflex action is excited so much as sometimes to assist materially in the expulsion of the fœtus, and to secure the expulsion of the placenta and uterine contraction after. Yet the removal of the child under these circumstaeces is attended by some risk of hemorrhage, especially if the child be extracted too rapidly; and if the uterus does not respond quickly to the fresh irritation. It would be best in these cases to give a trial of secale first of all, and if then no action ensue, the head may be slowly delivered, and the remainder of the body allowed to remain for a time in the passages to stir up the uterine activity, while, in the meantime, we employ the various other means known to be capable of rousing expulsive pains; and this would be the rule in those cases where there is clearly such an obstacle to the birth of the child as in any

case would demand traction, but where the pains had subsided and the uterine walls were lax.

"Thus we may briefly say that, in both cases of absence of the pains, we may do well (with due care) to use extraction. That *extraction* is peculiarly required in the cases where *continuous action* has supervened, while secale is detrimental; but that *secale* and uterine stimuli are of great service where the uterus is *relaxed;* while extraction (if adopted) should be employed with slowness and caution.

"It is proper to state that it is not intended to be said above that a contracted state of the lower segment of the uterus as revealed to the hand passed internally, necessarily implies a generally contracted condition, because the fundus might be coincidently relaxed, and if extraction were made suddenly, hemorrhage might occur above the constriction from the relaxed upper portion.

"The following is a *résumé* of the principal points desired tobe established in the foregoing paper :—

"1. That it is very rare to find symptoms of 'Powerless Labour' (Churchill) where the uterus is relaxed.

"2. That where serious symptoms have begun, and at the same time the pains have apparently ceased, it will almost invariably be found that the uterus is in a state of continuous action.

"3. That the continuous action is the cause of the symptoms of 'powerless labour.'

"4. That the time at which these symptoms arise varies considerably according to peculiarity of the patient, the violence of the action, and the position and presentation of the child.

"5. That if this constant contraction be fully established it is better to deliver the child artificially, unless we first try the effect of choloroform.

"6. That the effect of the continuous action is exhausting to the mother, and liable to be fatal to the child.

"7. That the use of secale is contra-indicated in such cases.

"8. Where the uterus is lax we can generally wait a considerable time without danger to the patient or to the child. When the uterus has been allowed time to recover its nerve force, then it is advisable to give some oxytoxic, as secale, &c. If this fail, we may then draw down the head to the vulva slowly and cautiously, which will probably induce uterine action. The removal of the child must be done cautiously, and only as we find the uterus to respond."

There can be but few practitioners of midwifery to whom these two conditions are not well known, but to Dr. Hicks must be ascribed the merit of having clearly and definitely interpreted them, and shown their value in determining the time and mode of

interference. But the question remains whether it is even wise to wait for the beginning of this state of continuous action—whether in a case of labour, where the presenting part makes no advance for some time, notwithstanding the presence of active pains, we should not at once complete the delivery. It is quite true that in the large majority of such cases the child may be born without artificial assistance, but will not less injury be done to mother and child by the judicious use of the forceps than by the delay? This is, however, going back to the uncertain teaching of each man's judgment as to the proper time for affording aid; but however this may be decided, it must now be held as a rule of practice that in no case should further delay be permitted where the uterus has passed into this state of continuous action.

Dr. Hicks would confine the use of secale to those cases where there is a cessation of rhythmical pains with relaxation of the uterus, and if secale is to be used at all it should only be in such cases, but the uncertainty of its action, and the great probability of its killing the child when its physiological action is manifested, are objections to its use even under the circumstances described; and this is not to be regretted, seeing that in opium we have a more certain and a perfectly safe substitute, and where it fails we can complete the delivery with the forceps.

FORCEPS.

In a course of lectures on obstetric operations, Dr. Barnes[a] sets forth very fully the merits and capabilities of the various midwifery operations. Out of his remarks on the forceps a discussion has arisen as to the terms "short" and "long" as ordinarily applied to this instrument, and as to the value of the second or pelvic curve in the blades. Dr. Barnes advocates the use of an instrument having a moderate pelvic curve, and longer in both the blades and the handles than those generally used in the Dublin Hospitals, and falls into the very common error of speaking of the "straight" or single curve forceps as "short" forceps, and confining the term "long" to an instrument having the pelvic curve, whereas the single curved forceps may be as long as any other, and some of the shortest instruments have the double curve, but in a letter published subsequently, Dr. Barnes acknowledges the inaccuracy, and suggests that the terms "long" and "short" should be discarded.

[a] Medical Times and Gazette, 1867-68-69.

Dr. Barnes objects to the straight forceps—1st. That it is more difficult of introduction, especially as regards the upper or pubic blade, requiring that "the patient's nates should be dragged over the edge of the bed;" 2nd. That it is more liable to rupture the perineum; 3rd. The sacral blade is extremely apt to bruise, by one of its edges, the sciatic nerve of the mother; and 4th. It is very likely to press upon the portio dura of the child, and cause facial paralysis.

To the first and second of these objections Dr. Beatty replies in a letter published in the *Medical Times and Gazette* of the 21st September, 1867, showing that it is only necessary to put the patient in the ordinary obstetric position for the introduction of the straight instrument, and that it does not endanger the perineum. In reply to the objection made by Dr. Barnes against Dr. Beatty's own forceps, "that it is inadequate to cope with a large range of cases which come within the power of the long forceps," Dr. Beatty quotes a case of convulsions, from his recently published volume, in which he dilated an os uteri about the size of a two-shilling piece, with his fingers, sufficiently to allow him to introduce his forceps, and with it delivered the woman of a living child; and states very justly "that an instrument capable of accomplishing such a feat does not require any further commendation."

Dr. Eastlake,[a] taking part in the same correspondence, confirms all that Dr. Beatty had said as to the ease with which his forceps could be applied, and the perfect safety, to both mother and child, with which it could be used; and, in a second letter (October 12), draws attention to the "vast superiority" of the straight instrument over the curved for the treatment of cases where the fetal head was placed in the occipito-posterior positions, quoting a passage from Sir James Simpson's "Obstetric Memoirs" in support of his argument. In this passage Sir James, after showing the advantage of correcting the malposition of the head in these cases, says, that it is here "we see the superior advantage of employing a straight pair of short forceps." "If we employed a curved pair in this position, and tried to turn, we should be obliged either to introduce them at first or extract them at last with their concavity instead of their convexity looking backwards, and consequently with great and unnecessary risk of contusion and laceration of the soft structures of the mother, from the projecting ends and sides of the blades."

[a] Medical Times and Gazette, Sept. 28, 1869.

Dr. Barnes, indeed, alludes more than once to the use of the straight forceps for correcting malpositions of the head, and states he used it to great advantage in two cases where the head came down into the pelvis in the transverse diameter; but he does not think it advisable to make the attempt when the head is in the occipito-posterior position. If the head turn of itself he thinks it should be allowed to do so, but "it is labour lost—it is encumbering Nature with superfluous help—it is a sin against that most excellent maxim, '*ne quid nimis*,' to attempt to promote this turn by twisting with the forceps."

Dr. Barnes does not, however, show how the objection raised to curved blades by Sir James Simpson is to be overcome, when this turn takes place spontaneously with the curved forceps applied to the head, and it is obvious that the curve of the blades must afford an obstacle to the accomplishment of the turn, which is admitted to be so desirable, and which the straight blades would not.

Another great advantage of the straight over the curved blades, dwelt upon by Dr. Beatty in this correspondence, is the fact, that the handle of the instrument always points in the direction in which the extracting force should be used, whereas the curved instrument gives an erroneous idea of the position of the head, and may cause the expenditure of much unavailing force in a wrong direction.

The distortion of the child's features alluded to by Dr. Barnes as caused by paralysis of the portio dura produced by the pressure of the points of the straight forceps cannot be attributed to this cause. In a paper published in this Journal in February, 1859,[a] it is shown that this is really due to paralysis, caused by long-continued pressure on the head, and arising, as originally suggested by Dr. E. Kennedy, from "congestion of the vessels in the neighbourhood of the roots of the nerves affected," and it is somewhat remarkable that in none of the cases recorded in that paper, or referred to as having been recorded by Dr. Evory Kennedy or Dr. M'Clintock, had the children been delivered by the forceps.

In introducing the forceps, when the head is high up in the pelvis, Dr. Barnes directs that it should be done in the transverse diameter of the pelvis, and that the lower or left blade should be first introduced, and that when this is fixed it should be held well pressed against the perineum by the back of the operator's

[a] On distortion of the features in newly-born infants. By George H. Kidd.

hand, while the second blade is being got into its place. In a foot note Dr. Barnes states his belief, that though the adherents of the short forceps generally recommend the upper or anterior blade to be passed first, he believes "the most skilful practitioners in London and Edinburgh now follow the method he recommends of passing the lower or sacral blade first." This is, however, too sweeping an assertion, as it appears from the manuals of both Murphy and Tyler Smith that they introduce the right or upper blade first, and from a lecture published in the *Lancet*, soon after the appearance of Dr. Barnes's (28th March, 1868), it appears that the present professor of midwifery in University College (Graily Hewitt) follows the same practice.

Dr. Hewitt introduces the second blade behind the first—that is, between it and the perineum—drawing the perineum backwards to make room, and gives plates illustrating this method of operating. But another and better plan was recommended by Dr. Radford so long ago as 1832—viz., to introduce the second blade in front of the first instead of behind it. To facilitate this Dr. Radford recommended that the forceps should be made with a "reversed lock," but till renewed in a paper recently published in this Journal,[a] this recommendation was lost sight of. With an instrument made as Dr. Radford directs this is the safest and easiest method of using the forceps, and even with the ordinary lock it has much to recommend it, but with this the handles have to be slipped over one another after the blades have been applied to the head. The Dublin instrument-makers now supply both Beatty's and Churchill's forceps with the "reversed lock" of Radford.

"The forceps being well placed and articulated, the head of the child well seized, what is the mode of traction that ought to be chosen?" This is the question asked by Dr. Marchant (de Charenton)—*Du Forceps et du Levier*, *Archives Générales de Médecine*, July, 1868—and in reply he urges the use of machines for the purpose. Of these he describes two, one invented by M. Chassagny of Lyons, the other by M. Joulin, Professeur Agrégé de la Faculté de Médecine, Paris. Chassagny's consists of a bar to be fastened to the mother's knees, and carrying a screw, which is connected by means of a cord to hooks on the handles of the forceps. By turning this screw, the forceps and child are brought away together. Joulin's *aide forceps* is, however, more in favour with

[a] On Cephalotripsy. May, 1867.

Dr. Marchant than this. It consists of a padded bar to be applied to the mother's ischia, the thighs being moderately flexed. The ordinary forceps is first applied, and a band is passed through the fenestræ, and then attached to a drawing screw in the bar; by turning this screw the forceps and head are extracted. As the band passes through the fenestræ it approximates the blades with a force proportionate to the resistance and thus tightens their hold. By means of a dynamometer the force used is indicated, and so, we are told, there is no occasion for exceeding the limits of a prudent intervention! The use of such machines may, however, be left to those, who, like Dr. Marchant, have not much muscular power; for this it appears was the reason for his entering on an investigation as to the various means of making traction. For some time, he says, he has been obliged to limit himself to fixing the forceps in its place, and, to avoid making traction himself, getting others to do it for him. But if the description he gives of the operation be true, it would be better for both patients and operators that the use of the forceps should be prohibited henceforth and for ever. The accoucheur, he says, who has proved his skill in placing the forceps, must now make trial of his muscular power (and this is not given to all accoucheurs) to pull at the handles of the instrument until the termination of the labour. Science teaches that traction should be made in the direction of the axis of the part of the pelvis at which the arrest occurs; but in practice the operator does as he best can—he varies the direction of the tractions, or even adds lateral movements, which, acting on the soft parts and walls of the pelvis, bruise the parts deeply. If, after many efforts, the head of the infant does not yet come, the accoucheur, bathed in sweat and succumbing under the fatigue, prays his colleague, if he have one, the midwife, or even his coachman, to take his place to draw on the forceps.[a] After these trials, if labour be not yet terminated, then they both harness themselves to the work, and if, after a certain number of trials, it is not successful, the forceps is given up and recourse is had to cephalotripsy. It is easy, he says, to foretell the success of this latter operation on an unfortunate who has had the soft parts of the pelvis bruised, and often torn. The average of mortality is much augmented by the internal disorders caused by all these manœuvres, and it is absolutely necessary to seek for a more easy and efficacious method of traction, which will not expose

[a] In a foot note, Dr. Marchant says he had actually to bring in the driver of his cab on one occasion for this purpose.

the woman to such dangers. Dr. Marchant thinks traction by mechanism fulfils all the conditions necessary to obtain these results, and it will probably be admitted by all, that no amount of mechanical force could well be more injurious than the violent manœuvres he so graphically describes.

ON THE TREATMENT OF LABOUR COMPLICATED BY OVARIAN TUMOUR.

Dr. Playfair[a] has collected and tabulated the details of fifty-seven instances in which a tumour of the ovary was pushed down before the presenting part, and caused an obstruction to the passage of the child. In thirteen cases the labour was terminated by the natural powers alone, and seven of the mothers recovered and six died, *i.e.* 46·1 per cent., but in these cases the tumour must have been either very small or very compressible. In nine cases the tumour was diminished by puncture, and all the mothers recovered, and six of the children were saved.

In five cases it was found possible to return the tumour above the pelvic brim, and in these also the termination was very favourable, all the mothers recovering. In connexion with these latter cases, Dr. Playfair alludes to, but does not give the details of the case described by Dr. Beatty, in the first series of this journal, and republished in his volume of "Contributions," in which a fibrous tumour that had completely filled up the pelvis, was drawn up by the action of the uterus when labour commenced, and, the child presenting by the breach, delivery was accomplished with a little assistance, the mother making a good recovery.

In fifteen cases craniotomy was resorted to, in four of which the tumour had previously been punctured, but in two of these it was not sufficiently diminished to permit of the passage of the child, and in the other two it collapsed, and perforation was performed, because, it is stated, that the child was known to be dead. Of the fifteen mothers, eight recovered from the labour, and seven died; but in several of the recoveries it is noted that the ovarian tumour increased rapidly in size, and carried off the patient.

Dr. Playfair believes the excessive mortality after craniotomy (1 in 2 instead of 1 in 5) is owing to the great contusion to which the tumour is necessarily subjected in the delivery.

In four cases the tumour ruptured, and two of the mothers

[a] Obstet. Trans., Vol. ix., p. 691.

recovered. In two the uterus ruptured before any attempt was made at delivery. Turning was performed four times, four of the mothers dying, and the forceps were applied twice, with one recovery and one death. In one case the tumour protruded through a laceration in the vagina, and was removed by ligature, the patient making a good recovery.

As to the effect on labour of ovarian tumours not obstructing the pelvic canal, Dr. Playfair says he has not been able to collect a sufficient number of cases to throw light on it, but his impression is the labour goes on favourably.

EXTRA-UTERINE FETATION.

This occurrence is so rare, and the histories of the cases recorded are generally so imperfect owing to the rapidity of the course run by the symptoms, that we are still without the means of forming an accurate diagnosis in an early stage, when alone it might be useful. Dr. Evory Kennedy has placed on record three cases (*Brit. Med. Journal*, January, 1869), which may guide to further observation. The first occurred in a young woman supposed to be three months pregnant, who was attacked with excruciating pain in the region of the uterus, followed by symptoms of internal hemorrhage, from which she sank in two days. On examination during life there were fulness and tension in the region of the uterus, greater than there should have been for the period of the pregnancy; but on vaginal examination the uterus was not enlarged in a corresponding degree, but a doughy resistance, or a feeling like a soft tumour, was perceptible on pressing through the upper floor of the vagina.

In the second case there was hemorrhagic discharge, and a clot came from the vagina, and the patient was supposed to have miscarried about a fortnight before Dr. Kennedy saw her, but she has so far recovered as to be able to go about the house. She was now attacked with violent pains over the pelvic region, and a tumour could be felt occupying the region of the distended bladder, but firm, solid, and painful to the touch. The pain was constant, but sometimes very violent for a few minutes, and extended round to the back and loins. She made frequent attempts to pass urine, which came away with pain, and in small quantities. Next day symptoms of collapse set in, inducing the suspicion that hemorrhage was going on internally. On a vaginal examination the os uteri was found tilted back and towards the

right side, and so completely displaced as to escape detection for some time. It was open, and the tip of the finger could be passed within it. It did not at all present the characteristics of an impregnated uterus. The upper part of the vagina could be felt pressed down into the pelvis by some semi-solid substance, giving the idea of clotted blood. The patient believed herself to be six weeks pregnant. The menstrual discharge, although it had not ceased, appeared in very small quantity last month. The uterine cavity proved, when measured, to be the normal length. Under treatment by opiates, rest, and nourishment, the pain and the symptoms attributed to hemorrhage ceased, but were renewed at the end of a week after making some imprudent exertion, but the ultimate recovery was complete, though slow, and the tumour gradually disappeared, as if by absorption.

In the third case the patient, who had previously had one child, menstruated on 16th July, 1846, and soon afterwards suffered from uneasiness in the uterine region, for which Dr. Kennedy saw her, along with Dr. Dwyer, on the 20th October. Fomentations and opiates relieved her; but some days afterwards agonizing pain in the right uterine and iliac regions suddenly set in, attended with vomiting and great prostration. Opium again gave relief, and she improved in health, and thought she "quickened," and on 20th November Dr. Dwyer heard the placental *souffle*. In March, 1847, she suffered great distress from pressure, and, as she termed it, a bursting feeling at intervals. The fetal heart was carefully sought for at this time, but in vain. On 25th April, 1847, Dr. Dwyer was called to her, as labour was supposed to have set in, but the pains subsided, and went off for ten days, when they returned with uterine discharge, and Dr. Kennedy again saw her with Dr. Dwyer.

On a close examination of the case Dr. Kennedy says they satisfied themselves the os uteri was patulous. The neck was not obliterated. A resisting fulness was felt at the upper part of the vagina, pressing on its upper floor, and more perceptible at the right side of the uterus, the neck of which was traceable, and but little enlarged beyond what would be the case if unimpregnated. It was pushed over to the left side. A sound passed up three inches, and could be felt by the hand placed over the pubes pressing up the fundus of the uterus. The case was now declared to be one of extra-uterine fetation. The patient continued in a complaining state, but able to go about, and not evincing much

appearance of delicacy, but at the end of eighteen years Dr. Churchill was called in to see her, and found her in a state of debility, worn out with discharges. On examination he found, a little to the right of the mesial line, a small opening as large as a goose quill, through which a hard substance like bone could be felt. Higher up there was a small tumour in the posterior wall of the uterus. The bones of a fetus of about the third month were removed in separate portions, after which the patient recovered her health.

Dr. Braxton Hicks has published a rare case of intra-mural fetation (*Transactions of Obstetrical Society of London*, Vol. ix., p. 57), in which the cyst burst into the interior of the uterus, and the fetus was discharged as if an ordinary abortion had taken place, but the placenta and membranes were retained; but four days afterwards violent uterine action set in to expel these, during which the cyst also ruptured into the cavity of the peritoneum, and the patient died in two hours. After death a considerable quantity of effused blood was found in the peritoneum; the uterus was enlarged, the cavity measuring five inches, and at its upper part, to the right side, the cavity was found in which the fetus had lain, with an opening into the uterus, through which it had passed, and a smaller laceration into the peritoneum. The placenta and membranes still lay in this cavity.

Dr. Braxton Hicks has also recorded a further case, in which he removed the remains of an extra-uterine fetus by abdominal section (*Trans. Obstet. Soc. London*, Vol. ix., p. 93). The patient conceived about five and a-half months previously, after which she suffered from metrorrhagia, which ceased after a time. At four and a-half months she had an attack of peritonitis. This was followed by irritative fever, and the cyst opened into the intestines, giving rise to purulent diarrhea, after which the tumour became tympanitic. On examination, the uterus, enlarged to the size of three or four months' pregnancy, was found in the left hypogastrium. On the right side a tumour was found reaching towards the pelvis, but not touching the uterus, its upper border nearly in contact with the liver, and its innermost nearly at the umbilicus. Within this an irregular body was plainly felt, having a strong resemblance to a small fetus. Dr. Hicks cut down carefully on this, and removed the fetus, which was remarkably putrid and offensive. The placenta was found in the lower part of the cyst, low down, and strongly attached, and was left to come away. The cyst was washed out with a strong solution of permanganate of potash, which was continued till the whole of the placenta had come away. From the day of the operation the mother's health improved, and her recovery was excellent throughout.

PART IV.

MEDICAL MISCELLANY.

Reports, Translations, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-FIRST ANNUAL SESSION.

Dr. Ringland, President.

Labour subsequent to the Cure of a large Vesico-vaginal Fistula.—Dr. M'Clintock reported the case of a patient who, after having been operated on for an extensive vesico-vaginal fistula (requiring nine stitches), became again pregnant and was naturally delivered of a large male child at the full term without any injury being sustained by the cicatrix or the vagina. About two years had intervened between the final operation on the fistula—for more than one operation was required—and the date of the labour. The vagina was entirely free from bands or cicatrices, except that resulting from the plastic operation. —*February* 13, 1869.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

Dr. Cuming, President.

Case of Hydrocephalus.—Dr. David Johnston read the following case:—J. M., aged five years, an apparently strong, healthy, well-nourished boy, was seized with an attack of vomiting and purging on the night of the 16th of December last. There was nothing remarkable in his previous history, except that for a month or so before his illness he never liked to remain alone, and his mother remarked in him a great dislike to allow his head to be combed.

The vomiting and purging continued up to the evening of the 17th—the day on which I first saw him. He had a hot skin, quick pulse, with great depression and nausea. The vomiting and purging subsided during the evening after the application of a mustard poultice over the abdomen and a few sedative powders.

18th.—He appeared dull, but the pulse was lower and the skin cooler; he slept well during the night; he had commenced to take a little arrow-root and milk; his tongue was slightly furred, and he complained of headache.

19th.—Headache increased; abdomen retracted; with slight dulness of hearing and intolerance of light and sound.

I now requested a consultation, which the parents of the boy readily agreed to, calling in Professor Cuming, who examined the patient very closely, and gave it as his opinion that he was labouring under an attack of hydrocephalus.

Four leeches were ordered to be applied, one to each temple and one behind each ear; the bowels to be kept open with small doses of calomel and scammony: the hair to be taken off and cold applications to the head.

The leeches appeared to produce no effect; the deafness, headache, and intolerance of light increased.

The sickness of stomach had now entirely disappeared. For the ensuing two weeks nothing of importance occurred. He sometimes sat in his cot and amused himself with toys and with his little brother and sister. He took almost as much food as when in health. One night during this time the hall door was closed forcibly, producing a great noise; he gave a sudden start and piercing cry, and appeared frightened; complained of pain in the head, and ever afterwards remained completely deaf.

Jan. 3rd.—When I called to see him he was seated on the servant's knee labouring under an attack of convulsions of the right side, which passed off in the course of half an hour, but the power of the side never completely returned, and during the course of the following month the leg and arm of the same side passed into a state of complete paralysis; but he always complained of increased sensibility of that side. His appetite remained good; his bowels were alternately relaxed and constipated. He was losing flesh rapidly.

About the 1st of March his bowels got very much relaxed; the stools and urine were passed involuntarily. A bed-sore formed over each trochanter and one over the sacrum. Emaciation was now extreme. He lay in a state of semi-consciousness. The pupils were widely dilated, but sensible to the stimulus of light. He was unable to speak; the tongue was clean and was protruded, without any divergence. His power of taste was remarkably acute, so much so that he was able to detect five drops of the syrup ferri iod. in a glass of milk.

During April and May nothing of importance occurred with him, with the exception of the formation of a few boils on the head, which suppurated freely, and discharged a large quantity of healthy pus.

In June there appeared to be a slight reaction in his system, the bed-sores healed, and he improved a good deal in his general appearance.

The appetite was good; he could take during the day a raw egg, above a pint of new milk, and a cup of panada. About the first week of July his bowels got suddenly constipated, the appetite bad; he refused to take any food, except a teaspoonful of milk. The head symptoms increased. He now lay quite motionless up to the time of his death, which took place on the morning of the 12th of July, after an illness of nearly seven months. During his long illness he had grown in height remarkably; his mental state seemed to have been a complete blank; he never spoke, but made some slight inarticulate noise when anything was presented to him which he disliked.

The *post mortem* was made on the following day by myself, in the presence of Dr. Cuming.

Body extremely emaciated; a large boil on the scalp, underneath which the pericranium was somewhat thickened and reddened. Head apparently disproportionately large. On opening the skull there was an almost entire absence of vascularity. The calvarium was thinner than usual, but ossification was complete. The dura mater was very tense, and on slitting it open the brain protruded. The convolutions were flattened; the brain-substance remarkably anemic and very soft. No fluid whatever was found externally. On removing the brain when the infundibulum was cut across, a jet of fluid gushed through the canal, which was quite pervious. The general ventricular cavity was found to be enormously distended by a limpid fluid amounting in quantity to twelve ounces. The ependyma of the ventricles formed a distinct firm membrane somewhat opaque and flocculent.

The brain-substance beneath it was almost diffluent and remarkably anemic. The choroid plexuses were less vascular than usual, and the membrane thickened and opaque. Some granulations were noticed on the arachnoid, especially along the course of the branches of the middle meningeal artery. These on examination presented the character of tubercular granulations.

The most interesting points in this case are :—

1st. The beginning of the attack with vomiting and purging.

2nd. The long duration of the illness, although an apparently acute attack.

3rd. The partial paralysis, one side only being affected, although the pressure must have been general.

4th. The preservation of some of the special senses with the entire destruction of others.

Finally. The possibility of the continuation of life with a brain almost diffluent and subject to so much pressure.

Aneurism of the Coronary Artery of the Stomach.—Dr. Cuming exhibited the stomach, spleen, and portion of the peritoneum of a patient who had

been operated on for strangulated hernia by his colleague, Dr. William MacCormac. The patient, a female, aged sixty, was almost moribund on admission into hospital, and died soon after the operation. She had complained of severe pain in the epigastrium for some days before death. When making the *post mortem*, Dr. MacCormac had found a dark mass above the lesser curvature of the stomach between the layers of the peritoneum. On examining the specimen which had been placed in his hands, Dr. Cuming found that the mass consisted of coagulated blood, which had been furnished by the rupture of a small aneurism, situated on a large branch of the coronary artery of the stomach proceeding towards the cardiac end of that viscus.

The blood, which was about three or four ounces in amount, was contained between the folds of the lesser omentum.

Loss of Speech in Typhoid Fever.—Dr. Ross read a paper on the subject of typhoid fever, its history and symptoms, from which we extract the following interesting cases :—

Case I.—A young lady, aged eleven years, born in India, was attended by me for typhoid fever in the early part of 1868.

The enteric affection was very severe—diarrhea, melæna to a large amount, and extreme tympanitis. She was conscious, put out her tongue when required, and took her food and stimulants well. Her pupils were remarkably dilated, but the unusual phenomenon in her case was that for three weeks she was unable to speak a single word, and even after this prolonged period she only very slowly recovered her speech. She got quite well in about four months, but the case was very tedious and very unmanageable.

Case II.—A female, aged eighteen, passed through a very severe attack of typhoid fever under my care. The complications in the form of bronchitis and pneumonia and diarrhea and tympanitis were most intractable and tedious. They had, however, yielded to treatment, and we were in hopes that we had gotten our patient, so to say, out of the wood, though in a very prostrated and emaciated condition. When suddenly, without any previous warning, she was seized with right hemiplegia with relaxed muscles and loss of speech. After weeks of careful nursing, nutritious diet in the fluid form with wine and chalybeates from the first appearance of the palsy, she was able to speak, but at first only in the simplest monosyllables. Muscular power was slowly regained, and now, ten months after her illness, she is able to walk very well, but she has only partial use of her right hand and arm.

What was the cause of the hemiplegia in this young girl ? I account for it in this way : the blood supplied to the brain was vitiated and impoverished; cerebral nutrition was impaired. Then followed softening

of the brain, and immediately antecedent to the paralysis rupture of nerve fibres.

Case of Extensive Paralysis from Morbid Condition of the Spinal Cord, probably Congestion.—Dr. Cuming introduced a patient whose history was as follows:—B. M., aged 40, pork-cutter. Healthy and vigorous man. Had usually once a-year a drinking-bout of about a fortnight's duration, but was temperate in the intervals. Had been drinking for nearly a fortnight, when he observed on a cold evening in the beginning of May, 1867, when driving on an outside jaunting car, that his hands had become numb and white as far as the second joints of the fingers. When he reached home he found that he was unable to lift a cup, although he could lift anything which he could grasp in his hand. On the next day he had a good deal of spirits, and went to the seaside when he fell asleep on an exposed wall. On awaking he was chilly and shivered, and he found the numbness increased. On the following day when on the street he found that he had some difficulty in walking, and went home to bed. On the succeeding morning he found on getting out of bed that he could not stand. He dressed, however, and was helped on a car and went to the house of a medical man.

I saw him for the first time nearly a week after. He was then totally devoid of power of voluntary motion below the neck, except that he could impart a slight movement to the right shoulder. His sensation was perfect. There was no abnormal sensibility, and no pain or uneasiness. Deglutition and articulation were perfect, but respiration was greatly embarrassed, mainly by an accumulation of mucus in the larger tubes, which he found it impossible to get rid of, as he was unable to cough. No involuntary movements could be excited by pinching or tickling. He was covered with a profuse drenching perspiration which formed a prominent symptom throughout the case. Pulse 126; tongue furred, but moist. He could relieve the bladder and the bowels. I found it impossible to make any observation regarding the presence of tenderness, as he had been blistered from the nucha along the whole spine, besides having a large blister on the chest, and being profusely salivated. I subsequently found that no tenderness existed, and the blisters, contrary to my expectation, as the patient could only lie on the back, healed rapidly and well, and neither then nor at any period during his illness had he a bedsore. He slept little, and badly; urine examined and found normal.

The prognosis was of course unfavourable, and I ordered merely two grain doses of iodide of potassium every six hours. To my surprise I found him alive on the following day. For some days there was very little change, except that the respiration became gradually easier. He was still, however, in such a condition that when turned on the right side

the distress became so great and urgent that he had to be at once laid on his back.

From this period a progressive change in his symptoms occurred. Gradually he began to suffer from involuntary and spasmodic contractions of the muscles of the lower extremities occurring occasionally, and from darting pains in the lower limbs. The power of motion gradually and slowly returned; at the end of three months he was able to get out of bed, and his progress has since gone on slowly, but uninteruptedly towards the regaining of his muscular power. His first attempt at motion caused him a good deal of pain. His general health always continued during his protracted confinement, excellent, and no bedsores formed. At present, nearly two years after the commencement of his illness, he walks slowly but steadily; he is easily overset by an obstacle, but he can walk about for a considerable period with occasional rests. His hands present a well-marked example of the "main en griffe" of Duchenne, and he experiences much difficulty in flexing the meta carpo-phalangeal articulations; indeed, he can only do this to a very limited extent. The muscles though wasted preserve a moderate bulk, and he is able to shave, although with much difficulty, and very slowly. There is a slight tendency to constipation, and urination is a little slow at the commencement, but he is otherwise in excellent health, and is undoubtedly steadily improving. He is not at present under any medical treatment whatever.

I do not feel myself able to pronounce definitely on the nature of the spinal lesion which existed, and of which traces are still present, but I have regarded the case as one of sufficient interest to be recorded. I am disposed to consider that the affection was mainly, if not entirely of a congestive character. The combination of symptoms present consisted of complete paralysis of a paraplegic form, no tingling, no increased reflex excitability, no pain or tenderness, power over the bladder, and rectum, profuse drenching perspiration, appetite and digestion normal, sleep imperfect, and dyspnea from inability to cough. Subsequently pain, spasms of the lower limbs, peculiar deformity of hands.

Excision of the Lower Jaw.—Communicated by W. MacCormac, M.D.; M.R.I.A.; F.R.C.S.I.; Surgeon to the Belfast General Hospital.—The operation for the removal of one-half the inferior maxilla is a surgical procedure both difficult to perform, and of comparatively rare occurrence. It is only in more recent times, indeed, that patients afflicted with disease of the lower jaw received surgical aid in any shape. And to British surgery is due the merit of the innovation, Mr. Anthony White having performed resection of a portion of the lower jaw in 1804, several years before Dupuytren or Cusack commenced the series of brilliant successes which established the operation as a sound and safe surgical proceeding. The number and

size of the vessels involved render the risk from hemorrhage, both immediate and consecutive, very great—so much so that many amongst the earlier operators recommended the ligature of the carotid as a preliminary step in the operation. Probably in no operation of the kind is an artery of the importance of the internal maxillary placed in such dangerous proximity to the knife, nor could there be one more difficult to secure should it be wounded. Without further preface I will give a short account of a case in which I performed this operation.

Ellen M'Cappin, aged twenty, a healthy country girl, was admitted recently to the General Hospital under my care. About two years ago, not having experienced any previous illness, she noticed that the left lower jaw was swollen. From this date it continued to increase gradually and without pain.

On examination the left side of the lower jaw from the bicuspid teeth to the sigmoid notch is found to be involved in a very hard irregular tumour. It is felt on both sides of the maxilla but projects more externally, where three distinct prominences, continuous with each other, can be distinguished. One of extreme hardness covers the ascending ramus as high as the notch; another, the size of a small hen's egg, also very hard, projects beneath the body of the bone, whilst the third, elastic and comparatively soft, involves the whole of the alveolar border. The tip of the coronoid process, the angle of the jaw, and articulating head of the bone, alone appear uninvaded by the growth. The third or wisdom tooth, never made its appearance. The second molar got loose, and was extracted some time ago; and the first molar I removed myself, thinking, possibly, it might thus give exit to fluid from the elastic tumour on the alveolus. As none came away, the cystic nature of the growth was excluded from consideration. The diagnosis before operation as to whether this tumour might be fibrous, cartilaginous, or myeloid, was almost impossible. I thought it probably fibrous or fibro-cartilaginous, with deposit of bone, judging from its extreme hardness. The discrimination of the nature of the growth was, however, of no practical importance to the patient, as there could be no doubt as to the necessity of the removal of the affected portion of the jaw, which I decided to disarticulate. The patient having first been fully chloroformed, the first bicuspid tooth on the affected side was extracted, as in this situation, it was decided to divide the bone. A nearly rectangular incision was then made commencing opposite the lobe of the ear, proceeding downwards to the angle, and thence across the body to within half an inch of the symphisis. All the soft parts down to the bone were divided in this first cut. The facial artery and a mental artery being wounded, were at once taken up and tied at both ends. The flap thus formed was carefully dissected up, the knife being kept close to the bone, and in this way, and also by having commenced the vertical incision so low down, the parotid

duct, and the chief branches of the facial nerve, escaped injury. The outer surface of the tumour being now thoroughly exposed, the jaw was cleared at the point of section in front of the mass, and divided with a small saw cutting from below upwards. The operator to do this must stand behind the patient, the head being thrown back, and the section is thus effected with great ease, as the lower jaw is steadied against the upper, and the soft parts can readily be held aside, and incur no such risk of injury as when the end of the saw is inside the mouth. When the bone was nearly cut through, a bone forceps completed the separation by dividing the alveolar process.

The jaw was now everted, and the edge of the knife being kept scrupulously close to the bone, the deep fasciæ and the mylohyoid and internal pterygoid muscles were dissected off the inner surface. By depressing the jaw forcibly the attachments of the temporal muscle were brought into view and severed; then the bone was rotated outwards, and the external pterygoid muscle divided with the utmost caution. The joint was opened in front, its capsular and other ligaments severed, and the tumour removed. Only two other small arteries required ligature, and three ounces of blood were certainly not lost during the operation. The influence of the chloroform was maintained throughout. The wound having first been bathed with carbolic lotion, was closed with six interrupted sutures, inserted through the whole thickness of the cheek. Carbolized dressings were applied, but no plugs of lint introduced internally, which serve, I think, no useful purpose, form a nidus for the collection of foul discharges, and are painful and difficult to remove. The only instruments I had occasion to use during the course of the operation were a scalpel, saw, and cutting forceps, and from the first incision to the insertion of the last suture, and application of the dressings, the time occupied was exactly twenty-four minutes. The after-progress of the case proved very satisfactory. The wound united by adhesion. There was nothing complained of by the patient but soreness in the throat, which lasted only two days. One week after the operation she sat up perfectly convalescent, all the stitches and ligatures removed, and the wound almost quite healed. The small amount of deformity is very surprising, and the situation of the incision and cicatrix are quite invisible when the patient is looked at in front, in fact it would be difficult for a stranger to tell from which side the jaw had been excised. There is now no retraction of the remaining portion of the maxilla, and the inferior incisors correspond exactly to those in the upper jaw. On making a section of the jaw the tumour is seen to spring from its interior, distending the bone in all directions, somewhat irregularly, or more to the outer side, as before mentioned. It is of a uniform white colour, dense, and firm to the touch, and contained spicula of bone. In the centre of it is a small tooth, which is the missing wisdom tooth. To the unaided eye its

characters are those of a fibroid growth, and the microscope shows that it contains fibres and elongated nucleated cells. There is every reason to hope that the disease, having been completely extirpated, will not return.—*April* 5, 1869.

TRANSACTIONS OF THE CORK PATHOLOGICAL AND MEDICO-CHIRURGICAL SOCIETY.[a]

Case of Intestinal Obstruction. By Dr. W. Jackson Cummins, Physician to the County Hospital, &c.

October 6th.—I was called to P. M., publican, aged thirty, complaining of headache, severe abdominal pain, and general pyrexia. Three grains of grey powder and seven of Dover's powder afforded him relief and a good night, but on the

8th.—The abdominal pain was again severe and paroxismal, and accompanied by some general abdominal fulness and excessive tenderness, limited to the ilio-cecal region; the bowels had acted several times, the discharges being thin and feculant. Six leeches were now applied to the tender part, followed by fomentations and a linseed poultice. The hyd. c. creta and Dover's powder were also given at bed-time, as before.

9th.—This treatment afforded much relief, removing almost entirely the pain and tenderness; pulse 90; skin cool and perspiring; tongue almost natural; no return of diarrhea. The poultice was continued as before, and the hyd. c. creta and Dover's powder (the latter in reduced dose), given every fourth hour.

10th.—Appears better in every respect, except some return of the ileo-cecal tenderness and pain; no gurgling; bowels have not acted since.

The medicine in slightly modified dose was directed to be continued, and six leeches applied to the ileo-cecal region.

Towards evening the abdominal pain and fulness had become so severe, especially in the hypogastrium that I was sent for, and found the leeches, which had not been obtained until late in the day, still on. There was much hypogastric and general abdominal fulness, and severe paroxismal pain; bowels had not acted; tongue white and moist; pulse 100; breathing markedly thoracic. As the patient was unable to micturate I passed a catheter and drew off nearly a pint of urine, and had hot fomentations, followed by a large warm poultice, applied to the abdomen, confidently hoping that the leeches and other soothing applications would promote a natural relaxation of the bowels.

11th.—I paid an early visit, and was disappointed to find that my patient

[a] These Reports are furnished by the Secretary, Dr. Purcell.

had spent a bad night, suffering extreme torture in the left hypogastrium, which, on examination, I found occupied by an uncircumscribed tumour, dull on percussion, excessively tender to the touch, and communicating to the hand a doughy inelastic sensation. The remainder of abdomen was full and tympanitic; tongue furred; breathing thoracic; pulse feeble, irregular and unequal; not easy to count, but at least 120; countenance collapsed. While I was present he vomited, for the first time, a quantity of dark green fluid. I immediately ordered him a glass of hot punch, and as the bowels had not been opened for some days, drove home for a syringe and long tube.

On my return I found that the punch had been retained, and had enabled him to rally considerably; pain still paroxismal and severe.

I passed the stomach pump tube a few inches up the rectum, and gently injected a large washing basin full of warm water. This was retained, and after a time followed up by another basin full of warm gruel containing soap and oil.

The distention caused by this was most distressing, producing violent vomiting and pain, but I persevered until the abdomen contained six or eight pints, when I withdrew the tube; it was followed by the return of a pint or two of fluid, which was ejected with great force, but without admixture of feces or flatus. I now ordered pills containing each one grain of opium, every third hour, directed that the fomentations should be assiduously applied, and suggested a consultation.

Dr. Townsend (senior) met me in consultation at noon. The opium pills had tranquillized the patient and relieved pain; pulse had become full and regular, and come down to 100; vomiting persisted.

Ordered the pills to be continued every second hour for two more doses, and then every fourth hour; and I threw up, by stomach pump tube, introduced *just within the sphincter*, three large washing basinfuls (about ten pints) of warm water, which caused as before (during the latter part of the operation) severe pain and violent vomiting. The greater part of this enormous injection was retained.

Fomentations, poultices, &c., were directed to be used as before, and a diet of milk and soda water, with a table-spoonful of brandy, every second hour, was prescribed.

I again visited him in the evening and found that vomiting had been almost constant, the ejecta being copious, and of a dark green colour. Some of the milk and soda water had however been retained. I again threw up three basinfuls of gruel in which a few eggs had been beaten up. Almost the entire was retained, and caused the same pain, distention, and vomiting as before. Pills to be repeated every third hour during the night.

12th.—Abdominal distention and tenderness very great; pain paroxysmal and severe; vomiting almost constant; nothing from bowels, not even

flatus; tongue furred; pulse full, 100; has slept a little; breathing less markedly thoracic. Dr. Townsend again met me in consultation, and we determined to continue the pills every third hour, and to have the following liniment rubbed over the abdomen twice a day. Lin Belladonnæ, ʒ pp. glycerinæ, ʒi. p. I again threw up three basinfuls of gruel and eggs, with the same effect as before, except that the vomited matters had a distinctly stercoraceous odour.

In the evening I found that the doughy inelastic tumour had moved from the left iliac region towards the median line, indicating some peristaltic action of the affected part of the small intestines. The pain was also less severe, but the tongue was much furred, there was excessive thirst, and the vomited matters had been stercoraceous during the entire day. The pulse, however, continued pretty full and only 100. I again threw up the gruel and eggs as before, which caused horribly stercoraceous vomiting, but on withdrawing the tube (which since the first injection I had introduced only just within the sphincter) I had the satisfaction of finding that the enema was ejected with great force, and accompanied with much flatus, having a true feculent odour; there also appeared to be some broken up feces mixed with the gruel.

The patient informed me that the belladonna liniment had afforded much relief on each application, causing an agreeable sensation of internal heat and glow. Pergat.

13th.—At our visit this morning we were gratified to find that two feculent stools (one of them semi-solid) had been passed during the night, and that vomiting and pain had entirely ceased. We directed the liniment to be continued, and two opium pills to be taken at bed-time.

14th.—Bowels have acted several times; pulse 96; tongue improving; no vomiting nor pain; abdominal fulness less; rept pil hora somni. Dr. Townsend now considered the patient well enough to take his leave.

15th.—Had severe pain in the left hypogastrium again last night, followed by several large pea-soup dejections from bowels; tongue furred; pulse 100; skin hot, especially over abdomen, which is tympanitic and tender. A copious eruption of boils, due probably to the fomentation, poultices and liniment, has appeared on the abdomen, especially towards the right side where the leeches were applied; all topical applications have therefore to be omitted. There has been no return of vomiting. I ordered an opiate pill to be taken every sixth hour, and ice to be freely swallowed; diet of milk and beef-tea; no stimulant.

16th.—Abdominal tenderness less, but pea-soup dejections continue as before, and are very copious. Pergat.

17th, 18th, 19th.—Has continued in much the same state, the diarrhea gradually decreasing, but still copious and unchanged in character. The abdominal boils are very sore, but tympanitis and tenderness rather less. Pergat.

20th.—Had a chill at bed-time; in other respects as before. Pergat.

21st.—Free diaphorisis during the night and a good deal of sleep; the abdomen has reduced in size, and the tenderness is now confined to the ilio-cecal region. The tongue is clearing at tip and edges; pulse 90; continue pil sextis horis.

22nd.—Tongue clearing rapidly, dejections less frequent, and unaccompanied by pain; the pill to be taken only morning and evening.

23rd.—Much better; dejections improved in character, and much less frequent; pill to be taken only at bed-time.

26th.—Diarrhea, which had continued more or less up to the present time, has to-day been replaced by a natural motion. There was much perspiration last night; tongue quite clean; pulse 84; abdomen almost natural, except for the very sore boils, which cause great suffering; omit the pill; to take a little wine in arrowroot.

28th.—Was up for awhile yesterday, and eat some chicken with relish.

Nov. 16th.—Has been tolerably well since, but even now is obliged to be most careful as to diet, the smallest indiscretion in that particular having more than once since his illness caused abdominal pain and heat of skin. Stimulants, even in great moderation, have always disagreed, so that he has been obliged to avoid them altogether; but, on the whole, he is gradually regaining his usual health, and my apprehensions as to the possible occurrence of hemorrhage are almost at an end.

I feel that an apology is due to the society for the tedium with which I have related this case; but it appears to me both interesting and instructive. It was ushered in as a case of enteric fever, but soon took on the character of idiopathic enteritis, and presented during its decline and convalescence the symptoms of ulceration of Peyer patches.

Obstruction of the bowels, attended by collapse, and proceeding to stercoraceous vomiting, occupied the mid period of the illness, and very nearly proved fatal; while accompanying this complication, and probably connected with it as a cause, we had the doughy inelastic tumour in the left hypogastrium, which subsequently moved towards the mesial line.

It is not easy to say positively whether this tumour was an intus-susception or an agglutination of some coil of the small intestines by local peritonitis. The complete absence of tenesmus and bloody dejection, as well as the recovery of the patient without expulsion of an involuted portion of the gut argues rather against the former opinion, while the peculiar feel of the tumour was more in favour of the latter; but the disappearance of the swelling after the intestine had become pervious is strong evidence in favour of its having been an involution which had become unfolded under the influence of the remedies used, and to this supposition my own opinion inclines.

We can hardly doubt that ulceration of the intestinal follicles was one

of the lesions which existed in this case; and if one of these ulcers extended all round any portion of the ilium it might have caused obstruction by acting as a solution of continuity (Brinton); again, the obstruction may have been due to a paralyzed condition of the ilium directly due to the enteritis; or, possibly, the increased peristaltic action of the bowel above the inflammation may have forced a portion of the healthy bowel—constricted in its transverse diameter by peristalsis—into the inflamed part, which, being paralysed, was incapable of contraction.

In ordinary obstruction, due to a mechanical impediment to transit of the intestinal contents, the portion of intestine above the constriction becomes distended, paralysed, inflamed, and gangrenous in due course, but in the case I have read the inflammation preceded the obstruction, and must be looked upon as its direct or indirect cause. But in all forms of obstruction an abnormal peristalsis quickly supervenes; and if unable to overcome the obstacle, becomes a new source of danger, specially so when inflammation is the cause of obstruction. It requires, therefore, very little reflection to perceive that treatment should rather be directed towards controlling excessive peristalsis than to increasing it; and yet we find purgatives again and again administered in this disease. It is not many weeks since I read of a case very similar to the one I have detailed, treated in a justly celebrated clinical hospital with calomel, croton oil, and elaterium *almost to the last*, although the *post mortem* revealed inflammation and gangrene of a large portion of the ilium.

Since I treated the above case I have had the good fortune to meet with the late Dr. Brinton's valuable work on "Obstruction," and it is really refreshing to read his rational remarks on treatment—so opposed to the principle of purgatives, which is too common. Opium is Dr. Brinton's sheet anchor; and I have little doubt that in the case I have read it was opium which saved a life which would almost certainly have been lost had purgatives formed a part of the treatment.

I had some doubts about the propriety of using belladonna, even as a liniment, being aware of its alleged effect upon the nervous centres as an antagonist of opium.

The result, however, proved that such fears were groundless, as the one sedative seemed only to assist the other in controlling excessive peristaltic action and allaying morbid irritability and spasm.

The large diluent injections used in this case acted most beneficially. I must admit that I was astonished at the quantity received and retained, amounting to between nine and ten pints—possibly more—morning and evening, and even three times in one day. Such quantities must have distended the large intestine to its utmost extent; and it is fairly open to discussion whether the ilio-cecal valve did not permit a portion of each enema to pass into the small intestine.[a]

[a] In the discussion which followed the reading of this case, several instances were

Dr. Brinton states that it is only when extreme distention exists in both ilium and cecum that regurgitation through the valve is possible; but we know that in typhoid fever ilio-cecal gurgling, due to regurgitation through an ulcerated and incompetent valve, is a common phenomenon. If such a lesion existed in the case of P. M., a portion of the injection may have passed through the valve and pressed back an involuted portion of intestine, thus relieving mechanical obstruction.

In one case attended by Dr. Brinton, where the stricture occupied the upper part of the ascending colon, "nine pints of injection were always found to be the maximum during the many days which preceded the complete and permanent relief of the occlusion;" and he adds that a "larger quantity would scarcely be receivable by the whole of the large intestine, inasmuch as in such a case the circumstance that the obstruction occupies the small intestine often makes the belly much more sensitive to distention, however gently and patiently the process of filling the bowel may be carried out."

As a practical point in connexion with injection, I would remark that complete occlusion of the anus by a tube of large diameter seems to me more important than the passage of such tube any distance up the rectum. I used the stomach pump tube, and although the aperture through which the fluid passed was at the side, instead of the end, I soon found that its introduction *just* within the sphincter was sufficient to secure full injection. This is what we should expect, as, however far a tube is passed, the pressure backwards on the sphincter of the column of fluid which distends the rectum, is an element in the propulsion upwards of each additional quantity injected.

Case of Cerebro-spinal Fever. By John Popham, M.A., M.B., Physician to the Cork North Infirmary.

Jeremiah Horgan, aged thirteen, was admitted to the Union Fever Hospital on Oct. 16th, 1868.

Oct. 17.—He passed a sleepless night; furious delirium; leaping out of bed, screaming and talking incessantly, chiefly about following horses, his ordinary occupation. To-day he mutters incoherently; has optical illusions; for example, he jumped up in the bed and cried out, "there is a horse in the place," and, as if it were pictured on his retina, he pointed to the opposite wall, crying out, "there 'tis." He also fancied there was a gate before him, and described it. Being asked his name, he told it correctly, and also where he lived and went to school. He also

mentioned of fluids used as injections being tasted in the mouth; such may, however, have been due to absorption; but Dr. Popham mentioned one case, *which he witnessed*, where castor oil, which had been injected into the rectum, was vomited shortly afterwards in unmistakable purity.

knew the names of things shown him. His face has a wild, scared look; his head is kept in perpetual motion; jactitation of the hands; eyes natural, except that branches of vessels from the external canthus extend to the left cornea. Pulse 120; great hyperesthesia of the back of the neck; tongue furred; bowels confined; some small purplish spots on the breast. A person has to sit beside him to restrain his efforts to get up.

Head ordered to be shaved; leeches to be applied behind the ears; a dose of the house-medicine to be given at once; ice to head, and a table-spoonful of the following mixture every third hour:—

℞. Ammonii bromidi, ʒi.
Aquæ, ʒvss.
Syrupi, ʒss. m.

Oct 18.—Had no sleep either in the day or night; delirium like that of the preceding night, chiefly about pulling grass for the horses. He kept up all night the same incessant talking, turning from side to side, and when left for an instant, getting out of bed. When I was in the ward he kept shouting, "Mike, Mike;" he took up the blanket, and held it up as he would the reins, and cherupped to the supposed horse to get along; at other times he pointed with his index finger to some imaginary objects. He told his name correctly, and put out his tongue; he was not so restless as on yesterday. His face had a peering look, not directed at you, but at something beside or behind you, while he seemed heedless of real objects; it was, in fact, more subjective than objective vision. His head was in continual motion, quite involuntary, not rhythmical; all the features working spasmodically; hands and feet twitching; at times picking the bed clothes, or pulling them over his head. He drank fairly, but occasionally kept some of the fluid in his mouth, and then made an effort to swallow it. Pulse 124. The sounds of the heart could scarcely be separately distinguished; impulse feeble; respiration heard distinctly over the chest; the inspiration is short and quick; the expiration is slow and interrupted; great tenderness of the back of the neck; he cannot bear it to be touched; he seemed quite exhausted from want of sleep; no improvement from the leeching or cold applications. Vertex ordered to be blistered and dressed with mercurial ointment. Continue the mixture of bromide of ammonium. Beef-tea and new milk ad lib.

℞. Mixt. camph., ʒi.
Liq. opii. sedative, m. v.
Liq. ant. tart. m., x. m.

This draught to be repeated after four hours, if needed.

Oct. 19.—He dozed a little after first draught; slept some hours after the second; some nausea to-day and vomiting; the eyes remarkably clear and widely opened, giving them a staring look; he whines constantly; the head oscillates now rhythmically from side to side; nucha is intensely

painful and stiff; he screams when he sees any one about to touch it; tenderness on pressure all down the back, and stiffness; when he is raised to the sitting posture the back is moved as if it were a rigid, inflexible body, and resists all efforts to bend it. When I tried to press on the cervical vertebræ he seized my hand and dug his nails into it. He also feels acutely the pinching up a fold of skin on the legs. His hands are occupied drawing up the bed-clothes and picking them. Pulse 120. Speech to-day is unintelligible. Asked a question, he mumbles a reply, which is merely a confusion of sounds; yet he puts out his tongue and gives me his hand; he passes the discharges involuntarily. The blister over the vertex rose well.

Ordered to omit the mixture of bromide of ammonium, and to take 5 grains of the bromide of potassium every third hour. Brandy to be given in milk. Repeat the anodyne, as before, without the vin. ant. tart.

Oct. 20.—He got but one draught, as he slept well after it. He is silent and quiet to-day, buried seemingly in internal contemplation; the eyes staring, the upper lid raised to the utmost, so that the white appears above the cornea; the pupils still obey light; a dark pigment has come out beneath the lower lid; the conjunctiva are clear and pearly; the oscillation of the head is intermittent; his upper lip is quite drawn up, uncovering the gums, while the angles of both the lips are depressed, giving the face a peculiarly sorrowful expression. When I visited him a few hours later both arms were symmetrically extended at full length, and at an elevation of 45 degrees; the power of swallowing is less; he keeps liquids some moments in his mouth before swallowing them. Aphasia, both from loss of words and inability to articulate; still he knows what is said, and tries to answer; the tongue is not able to be protruded; the pain of the neck is excessive; the back rigid; purplish stigmata still visible. Continue the bromide of potassium. Back stuped with hot flannels, sprinkled with spirits of turpentine. The blistered surface on vertex to be kept discharging by Albeyspiere's plasters.

Oct. 21.—Got a single draught last night; slept, but very uneasily, and moaning; his countenance looks sad and pitiful, quite vacant in expression. On rousing him up and asking his name, he answered automatically, "Jerry Horgan, sir;" but he made no answer to any other question. Eyes to-day half closed; on being touched the upper lid became forcibly contracted and resists any effort to raise them. Abdomen is rigidly contracted. The pulse has ceased to be felt in the wrists, but still beats at the elbow 130, and very weak; the knees are forcibly drawn up to abdomen; the sensibility still remains acute; touching the muscles of the neck makes him scream. Some pale maculæ are visible to-day, and "taches bleuatres" show themselves in two places on right hip, in size about an inch by one-half; much jactitation. Beef-tea and brandy enemata during the day.

Oct 22.—All the symptoms aggravated; respiration very slow, and the pause after expiration much prolonged; he seems unconscious; still swallows a little; the colour of skin has darkened.

He died in the evening.

Appearance of body thirty hours after death. Rigor mortis considerable; legs and thighs still stiff; the under surface of body is purple, almost black; the face retains the look of painful contraction, especially at the angles of the lips, which are wrinkled and drawn down. The body is much emaciated, more than would be supposed from the length of the illness; dulness on percussion over the spleen; abdomen retracted.

The head only could be examined. On removing scalp it was very dry, scarcely yielding a drop of blood. When the calvarium was taken off, the dura mater appeared turgid with almost black blood, especially near the longitudinal sinus; the meningeal vessels were thrown out in strong relief like twine. The sinuses of the dura mater were gorged with dark fluid blood, which spouted out on opening them. About two ounces of tarry fluid blood, mixed with serum, were found at the base of the skull, but no pus or lymph. Spots of lymph, of the size of sago grains, were found in great numbers along the upper margins of the hemispherical fissure. The pia mater was throughout intensely injected and easily stripped off. Sub-arachnoid effusion, causing an opaline appearance, was found in various parts of the upper surface—none on the lower. On section the cortical substance of the brain was very vascular, and the medullary darkened by exudations from small vessels; some fluid in the ventricles. The whole substance of both cerebrum and cerebellum was softer than ordinary. Weight of brain, fifty-two ounces. Much serum appeared to be in spinal canal, but the state of the spinal cord could not be examined.

Case of Sub-conjunctival Ecchymosis, heralding an attack of Cerebral Aphasia.—One day last summer a dispensary patient named Thomas Ruarke came to me complaining of an extravasation of blood under the conjunctiva of the right eye, completely hiding the sclerotic. I asked him did he get a fall; he said not. I told him not to mind it, as it would not affect his vision, but would be absorbed in three or four weeks. However, I had never seen the like before, save as the consequence of a fall, or paroxysm of whooping cough. Ruarke then proceeded to tell me that on the day previous he was writing a letter (in his capacity of village scribe), when his hand shook and he felt an unaccountable nervousness. As he had been long suffering from cough, dyspepsia, prurigo, and slight hemorrhoids, and was in the habit of describing his symptoms with tiresome minuteness, I did not attach much importance to this new symptom, and merely prescribed a tonic. Next morning his wife sent for me to see him. I found him making vain

attempts to speak intelligibly. He did not stammer, but could not finish any sentence, or recollect the words he wanted. Wishing to see me, he pointed to my house and repeated "the man there" frequently; he could not say "Doctor." He would begin a sentence in a rapid but articulate way, and then stop abruptly. It was no use to suggest the missing word; he would not take the hint. When asked where had he any pain, he pointed to the left temple and left side of his head, never to the right side. He also pointed to his stomach and belly; but I think this was after I had given him a large dose of calomel, which perhaps griped him. He was not paralysed in any limb, and put out his tongue straight. As he kept repeating the word "gunna," I fancied he meant a pen, and therefore gave him one, with ink and paper. He scrawled his name all over the paper, and then looked up inquiringly, saying in angry tones, "Well?" "Well?" I told if he wished to communicate anything to me to write it, but he evidently could not accomplish it, but thought I wanted a specimen of his art. He remained in this state for some days till the calomel (which I gave as a purge) salivated him. His wife pointed out that the spittle was very fetid, but even when in his ordinary health he had an ugly habit of spitting about. However, he soon pointed to his jaw and gums, and I found them much ulcerated. As the ptyalism went on the extravasated blood began to be absorbed, and his speech became more intelligible. The first use he made of his speech was to complain that "that lassie" starved him, meaning his wife. Of course he had been kept on slops, owing to the state of his mouth. He could not always succeed in explaining himself, and then would get very cross. I thought it likely that the case would result in general paralysis and idiotcy, but had never seen a precisely similar case. The man has been a long time in hospital since then, and I understand will speak constantly of friends who are to bring him money, and again cry piteously.

21st December, 1868.—Ruarke was buried on last Saturday. Dr. O'Reilly, the medical attendant of the hospital, told me that some time after entering the infirmary he got a stroke of paralysis, which made his face quite crooked. Soon after he got paraplegic and very noisy, and inclined to be quarrelsome. He could not get out of bed, however, or express himself coherently. Eventually gangrene attacked one foot, and he died.

The points of interest in the case are the spontaneous and copious extravasation of blood, indicating a hemorrhagic tendency in the cerebral vessels, the occurrence of pure aphasia without loss of consciousness or paralysis, and the pain referred to the left temple.—*March* 10, 1869.

Case of Pelvic Abscess—July 11th, 1869, saw Catherine M'Grath, labourer's wife, Crow-hill. She told me that she was confined naturally

on the 12th of May of her third child, and that ten days or a fortnight later she got cold from washing clothes, lost her appetite, and got pains in all her bones. At first she did not remain constantly in bed, but had done so for three weeks before I saw her. The skin, tongue, and pulse were natural, and she said the pains in her bones were leaving her, adding that if I gave her something to give her an appetite she would soon be all right. Believing it to be the end of an attack of influenza, I agreed with her conclusion, and merely prescribed quinine, directing her to remain in bed another week. On the 28th of August her mother came to the dispenaary and asked for some turpentine to rub to the woman's leg. I expressed surprise that she was not quite well, and inquired if she was up. Yes, but suffering great pain in one hip and thigh, to relieve which she wanted the turpentine. Suspecting the nature of the case, I told the old woman not to use the turpentine till I should see her daughter. When I called I found her sitting over the fire looking rather feverish. I directed her to get into bed, and found she could scarce limp across the room, the thigh being flexed upon the pelvis, and motion very painful. She could not extend the leg or lie on her back. On examination I found that pressure just above Poupart's ligament caused great pain, chiefly towards the spinous processes of the ilium, and also, what I can't well account for, over about two square inches of the dorsum ilii behind the anterior superior and inferior spinous processes. She also suffered much pain of an intermitting kind along the track of the anterior crural, and obturator nerves. I could not detect a tumour above the groin, but could not press firmly, as it caused her great suffering. I told her that she must stay in bed, that an abscess was forming, which would in course of time come to the surface; that it would be very tedious and painful. Should it point above the groin I would lance it, but that it might break into the vagina, rectum, or bladder.

She seemed to believe that I was right, but cried out that she could not live long in such torture. I assured her that she would, and would, I believed, recover, citing the case of a lady whom I attended for pelvic abscess some years ago. The wise women of the place scouted the idea of an abscess, neither visible nor tangible. She asked to be allowed to apply a blister to the dorsum ilii and outer part of thigh. I permitted her, but said it could do no good, as the disease was in the hollow of the bone, not outside it. I thought antiphlogistics unsuitable, and ordered quinine, broth, and wine. The blister did no good. She would not take the quinine. Opium gave her a headache, and caused nausea. She tried poultices for some days, but would not continue them. She was hopeless of cure, and declined to use any more remedies except very dilute iodine ointment; would take very little food. I saw her several times up to the 14th October, during all of which time she lay on the

sound side. No sign of an abscess in flank. I told her it might break into the vagina, but made no examination. Knowing that she would object to it, and being unable to promise corresponding benefits, on the 14th, it burst, and a great quantity of matter flowed away, "per vaginam." She said the pain had abated for three days before. The sciatic had evidently been engaged, as the abscess enlarged, since the pain, at first limited to the thigh, ran down to the heel. In hope to keep the abscess open, I directed the vagina to be syringed thrice daily with warm water and Condy's fluid. This, however, was not done. She took some broth and wine, but after flowing for three days the abscess closed, and in a week seemed to be filling again, to judge by the return of the pain, which continued very great up to the 21st November, when it burst again, either in the groin, or, as it seems to me, from her description, *below* Poupart's ligament. I may be mistaken in this, however, as her family were at dinner when I arrived, and I could not well examine her before them. It flowed freely for eleven days; the pain left, and her spirits and appetite improved. On the 19th of December she could limp across the room with a stick, and was rapidly gaining flesh.

February 2nd, 1869.—Mary M'Grath is now quite well; is not in the least degree lame. I paused at her door to hear her singing to her children, evidently contented with her lot, humble as it is, and thankful for health regained. For six weary months she had prayed for death, as a release from intolerable pain. Some four years ago I attended a lady for pelvic abscess along with Dr. Currey of Lismore. I diagnosed the abscess early, from the general symptoms—lameness, tenderness on pressure above the groin, inability to extend the leg, hectic fever, &c.; but the most careful examination for some time failed to afford conclusive proof of its existence, and never having met a case of the kind before (except one of acute abscess), I began to think it might be a rheumatic affection. Eventually a tumour, large as a goose egg, formed above the groin, causing exquisite pain by its pressure on the nerves (anterior crural obturator, and *lastly* the sciatic). If any but a puerperal woman presented the same symptoms I would have supposed it a case of morbus coxæ perforating the acetabulum. However, pressing the head of the femur into its socket caused no pain, provided the position of the limb was not altered. The lady was made to take wildfowl, ext. carnis, claret, &c., but looked like one in the last stage of phthisis. Dr. Tanner saw her in consultation with Dr. Currey and me, and considered it nearly time to open the abscess, which Dr. Currey did with a bistoury some days afterwards. A breakfast-cupful of pus flowed away, care being taken to exclude the entrance of air into the sac. The pus was laudable and not fetid. Dr. C. put a narrow strip of lint into the lips of the puncture to prevent its closing, and then applied a compress of lint

wrung out of hot water, and over it an elastic woven bandage. He changed the dressing twice a day for a fortnight, the discharge being very great. It gradually diminished to a few drops of serum, and the lady recovered perfectly, having had another baby since then, which makes me suppose no uterine adhesions took place, as the labour was speedy and natural. Mary M'Grath's case, where the abscess burst, "per vaginum," and could not be kept open, was much more tedious.—*March* 24, 1869.

Case of Scarlatina, followed by Dropsy—Convulsions—Hemiplegia—Recovery. By W. C. Townsend, M.D., Senior Phys. to County Infirmary and General Hospital.

December 18th, 1868.—I was sent for to see Master N., aged eleven; a fine healthy boy, well nourished, and hitherto enjoying excellent health of mind and body.

On my arrival I was informed he had been ill for two days with a supposed feverish cold. On examination I perceived that he was covered with florid rash; in fact, he was as red as a lobster, hot, feverish, and thirsty; throat or glands in the neck not in the slightest degree engaged. He was in good spirits, had slept well the night before, and taken drinks freely; his bowels had acted well, and the secretion from his kidneys was large and apparently normal. Ordered citrate of potash mixture, one ounce every three hours, to have drinks freely, farinaceous diet.

He was kept on this treatment for a few days, with an occasional dose of grey and rhubarb powders. After the fourth day he had chicken-broth, and his convalescence was uninterrupted until the eighth day, when desquamation commenced. The urine, which was copious, was carefully examined, and exhibited casts, but no blood. Ordered warm baths every alternate night, claret, eggs, chicken. I took my leave on the 4th of January. On this day he appeared quite well, running about his room; tongue clean; appetite good; kidney secretion large, and apparently normal; specific gravity 1020. I gave most particular directions as to his clothing, that he should wear warm flannels next his skin, and the greatest care to be taken lest he might get chilled, the weather being very inclement.

On the 10th of January I found him in my study with his nurse. On inquiry it appeared he had been driven to my house on a Norway car, the nurse having been alarmed at finding his feet slightly swollen, and the secretions from his kidneys scanty.

On examination there was slight puffing about the eyelids, and œdema at and about the ankles.

Ordered to be taken home at once; to have a hot bath and eight grains of compound jalap powder, with five grains of nitrate of potash, every four hours.

I saw him next morning; he was quite dropsical; urine scanty, tea-coloured; bowels had acted freely; skin moist. Ordered powders to be continued, and one ounce of citrate of potash mixture after each powder.

January 12th.—Had an attack of convulsions this morning, and is now quite insensible; moans occasionally. The pupils are contracted; moves his limbs freely, but is quite unconscious. There is considerable difficulty in getting food into his mouth, but when it is got in, he swallows freely; urine passes involuntarily.

Ordered head to be shaved, and blister to poll; turpentine enema; jalap powders and potash mixture to be continued; to be supported with chicken broth, milk, &c.

He continued in this state for several days, with occasional attacks of epileptic convulsions, supported with chicken-broth, wine, and arrow-root; the citrate of potash mixture was continued; enemata administered every second day; two nurses were engaged, and he had every possible care and attention.

January 16th.—He lay in bed quite unconscious, his eyes half open and blood-shot, pupils somewhat dilated, squinting; moaning occasionally, with slight convulsive paroxysms; with a good deal of trouble support is got down; pulse slow and feeble; the surface of the body is warm; he moves his limbs freely; no paralysis.

This state of things continued until the 20th, when consciousness began to be restored; power over the bladder returned; the convulsive attacks ceased; he took food freely; urine copious, but loaded with blood.

January 24th.—He is now quite sensible; takes food freely; pulse feeble, "90;" urine copious, but still contains much blood; greatly emaciated; bowels acting, and quite under control. Ordered tincture of iron and nitric acid; to be supported freely.

From this to the 28th he improved rapidly, but required a large amount of support. On the morning of the 29th I found him sitting up in bed eating an egg; he had quite regained his strength, but the urine, although copious, was still albuminous and tea-coloured. I directed one jalap powder at night, the iron and acid to be continued. Up to this I had seen my little patient twice a day. This morning, seeing he was going on so well, I told his mother I would not see him until the next morning.

January 29th, evening.—In the course of the day I received a note stating he was not so well. On my arrival I found him quite unconscious, and perfectly hemiplegic; the surface of his body was warm, but no appearance of congestion. On raising the eyelids, the pupils were dilated, and the muscles of the face at the left side were distorted; his mouth was opened with difficulty, and he swallowed very badly. Ordered turpentine enema, mustard stupes to the feet, to be repeated every four hours, blister to the poll, to be supported freely with milk and barley-water.

January 30th.—Somewhat more conscious, but does not recognize anyone; bowels acted freely; urine passes away in drops; swallows fluids when got into his mouth; a large blister to be applied to the vertex.

January 31st.—Continues to improve, but recognizes no one; opens his mouth, but cannot put out his tongue; urine still passes away in drops; I had some collected, it was loaded with blood; takes support freely.

February 1st.—Still more conscious; he is quite hemiplegic at right side, face, tongue, arm, and leg. The urine passes away in drops; with difficulty he can be kept dry, of which he does not appear to be in the least conscious. After this day he continued to improve, acquiring power first over the tongue, then the leg.

On the 10th of February, for the first time, he recognized and called me by name.

On the 14th, the power over the bladder was complete, and he regained strength with great rapidity; the urine is copious, albuminous, but no appearance of blood; specific gravity 1015.

March 9th.—He is amusing himself in the nursery, and grown quite stout; the right arm is still feeble, and fingers slightly contracted; the face still slightly dragged, but he improves day by day. The urine is normal. He has been taking iron and nitric acid.

On the Employment by the Ancients of the Vapour of Sulphur as a Disinfecting and Curative Agent. By JOHN POPHAM, M.A., M.B.; Dub. and Cantab.

As a kind of appendage to the interesting and practical remarks made by Dr. Cummins upon the use of sulphurous acid for the prevention and cure of certain zymotic diseases, I beg to subjoin a few extracts, rather hastily selected from the writings of the older classic authors, in proof of the very high estimation in which sulphur was held, more especially for disinfecting purposes—from an early period of civilization. It received its Greek appellation of *Θειον*, divine, not improbably from its lustral uses in religious ceremonies, or, as others think, from the sulphureous vapours emitted in places where lightning had committed ravages; leading to the old opinion that sulphureous combustion was intimately connected with the phenomena of that element.[a] In the 16th book of Iliad, we meet with a distinct allusion to the properties of sulphur as a *deodorizing* substance. When Achilles brought out from its cabinet the golden beaker, from which no one was allowed to drink, and out of which he used to pour libations to Zeus alone of the gods, he purified the vessel first by fumigation with sulphur, and then rinsed it in flowing water.[b]

[a] "Quid quod omnibus fulguritis odor sulphureus est." Seneca Nat. Qu. 2, 21.

[b] Iliad, xvi., 225.

"He took a most unvalued bowl, in which none drank but he—
Nor he, but to the deities, nor any deity
But Jove himself was served with that; and that he first did cleanse
With sulphur, then with fluences of sweetest water rense."

CHAPMAN.

"It is well known," says Van Swieten in his quotation of the passage, "that air long pent-up causes vessels to retain an unwholesome and musty odour, and that it was to remove this the fumigation was employed."[a] A still stronger recognition of the purificatory virtues of sulphur occurs in the Odyssey. After the slaughter of the suitors of Penelope, when their dead bodies had been removed, and the blood carefully sponged away from the reeking floors, Ulysses called for sulphur to purge the halls.[b]

"Οἶσε Θέειον γρηῢ, κακῶν ἄκος, οἶσε δὲ μοι πῦρ
Ὄφρα θεειώσω μεγαρον."

"Bring sulphur straight, and fire, the monarch cries,
She hears, and at the word obedient flies.
With fire and sulphur, cure of noxious fumes,
He purged the walls and blood-polluted rooms."—POPE.

This process was the περιθυμιασις, that is, fumigation carried about from chamber to chamber, in order to correct the contaminated state of the air within them, and in the present instance, to destroy the effluvia from the dead bodies. The great importance attributed to this ceremony can be gathered from tne peremptoriness with which Ulysses insists upon its immediate performance, not even staying, though he was urged, to change his clothes, lest danger from pestilence may arise. We have good reason to conclude that amongst the ancients there was latent beneath the cover of religious customs the serious intent to preserve bodily health, and the more completely to insure the latter object, the former was put forward ostensibly. Thus Ovid, treating in his Fasti of the religious usages of the time, observes:—"Our seniors thought that purgations could take away all guilt and all the causes of evils. It was Greece that originated the custom. Greece inculcated that the guilty and impure could, by lustration, put away from them their impious deeds."[c] Hence religious purification was adumbrated by the various means of promoting cleanliness of person, and hence the connexion which was early discovered between putrefactive decomposition and pestilential diseases, and which led to the empirical burning of sulphur "as a remedy of ills." This, apparently a piacular rite, was found to be a real specific against their diffusion.

There is a reasonable degree of probability that the colytic virtues of

[a] Commentar. in Boerh., Tom ii., p. 126.
[b] Odyss., xxii., 526.
[c] Fastorum lib. ii., 37.

sulphur were not unknown to the Jews. Fire and brimstone are found in the scriptures frequently associated. We may observe, in passing, that the Saxon word "brimstone" has been invariably employed by the translators of the bible in place of the Latin word "sulphur." The destructive effects of sulphureous fumes upon vegetable life, or as we say in modern phrase, upon the vitality of organic germs, were well known to the Jews. "When the generation to come . . . see . . . that the whole land thereof is brimstone and salt and burning, that it is not sown—nor beareth—nor any grass groweth thereon,"[a] &c. It is not unlikely that the Jews made use of sulphur for preventing disease. It was their custom to throw the carcases of their unburied dead into the valley of Hinnom, or Tophet, and it became necessary to burn large fires there, so as to consume the animal remains, and prevent pestilence. That brimstone was used on these occasions seems deducible from the words, "The pile is fire and much wood, and the breath of the Lord, like a stream of brimstone, doth kindle it."[b] I shall only mention one other passage from the book of Job, in which the speaker declares that as regards the wicked, "brimstone shall be scattered upon his habitation,"[c] which has been explained to mean that when the wicked man should be driven from his house, it should be held to be unclean, and to require purification by sulphur to become habitable. Fumigation by sulphur was supposed to drive away demons from houses.

Amongst the Roman authors we find the testimony of its use becoming more decided. Pliny speaks of the wonderful nature of sulphur "quo plurima domantur."[d] He mentions sulphureous vapours as a means of testing epilepsy, "tanta vis est ut morbos comitiales deprehendat nidore, impositum igni." Epileptics cannot stand it, as it at once determines a fit. He also alludes to the frequent employment of its lurid flame for magic rites, of which we have many examples. In epizootic diseases the vapour of sulphur was much used, as it has been by the moderns lately in the cattle-plague, the spread of which Dr. Dewar found it useful to prevent. In the Fasti of Ovid it is much recommended in the diseases of sheep.[e]

> "Cœrulei fiant vivo de sulfure fumi
> Tactaque fumanti sulfure balet ovis."

This bluish smoke-like vapour of burning sulphur was directed to be applied by contact to the diseased sheep. In the sheep-pestilence described by Virgil in the third Georgic, the "sulfur vivum" was proposed amongst other remedies.[f]

[a] Deut. 29, 23.
[b] Is. xxx., 33.
[c] Job, xviii., 15.
[d] Plinii Nat. His., lib. xxv., ch. 50.
[e] Fast, lib. iv., 739.
[f] Georgii, lib. iii, 449.

As a means of purification the fumes of lighted sulphur were much in use amongst the Romans. Not only were houses fumigated, but also house furniture, especially bedding.

> "Et veniat quæ lustret anus *lectumque* locumque
> Præferat et tremula sulphur et ova manu."—De Arte Am.

Even wearing apparel was subjected to sulphur vapours, and on occasion men themselves were obliged to undergo it as a means of expiation.—Thus Propertius

> "Imperat et totas iterum mutare lacernas
> Terque meum tetigit sulfuris igne caput."—Lib. iv., 9.

and Juvenal

> "Cuperent lustrari si qua darentur."
> Sulphura cum tedis."—Sat. ii., 157.

The preceding passages show sufficiently the habit of the Romans, of burning sulphur, both as a purifying agent and an effective instrument in preventing disease.

The curative powers of sulphurous acid, when inhaled, have been lately much spoken of in various affections of the throat and lungs. Dr. Dewar has advised its use in phthisis, and explains its mode of action in that disease upon the hypothesis, that phthisis is caused by parasitic cryptogams, to the development of which sulphurous acid is deadly. Without venturing to give any opinion upon the theory, which is modern, we may say of the practice, that it is in a measure ancient. Avicenna speaks of sulphur inhalation as of use in checking coryza, "restringit coryzam suffumigatio." Dioscorides represents it as beneficial in hoarseness, purulent expectoration, and asthma, both when taken internally, and also by inhalation or suffumigation, *ὑποθυμιωμενον*. Both he and Pliny testify to its power of curing the bites of venomous animals, such as the scorpion.

When we add to the preceding uses of sulphur in the fuming state, its good effects in rheumatic and renal diseases, and in skin affections, such as vitiligo, we can judge of the high appreciation in which it was held by the ancients.

It is probable that modern physicians do not do full justice to this remedy, and that, comparatively speaking, it has fallen into unmerited disuse. There are symptoms now of its coming into estimation again. The celebrated Von Swieten was enthusiastic upon its merits. "Not without reason, he says, "have men at the very summit of the profession wondered how in this soft and insipid substance, such singular properties lie concealed, for the very worst poisons are subdued by sulphur alone." He describes its power of bridling the toxic effects of arsenic, antimony, and mercury, when blended with them. He notices also the power of sulphurous acid in checking fermentation, a fact believed to be of

recent discovery, and on which Professor Polli of Milan grounded his theory of giving the sulphites in zymotic diseases. He also points out its power of resisting putrefaction,—"Accensi sulfuris vapor omnem fermentationem præcavet, vel natam jam suffocat atque omni putredini quam maxime resistit." No testimony to its value can go beyond this. Van Swieten cautions us justly against its careless use, and mentions the liability of it to cause spasm of the glottis, pneumonia and permanent emphysema, if incautiously inhaled.

We learn from Dioscorides that the mode of inhaling the vapour of sulphur, and other volatile substances, was by a siphon. It is not unlikely that its use in magic rites for producing certain effects upon the brain, when blended, as in the Ciris of Virgil 370, with aromatic herbs, may have led to its similar administration in medicine. The ancient magicians well studied the art of producing, at will, light and airy visions, or heavy and terrifying impressions by different forms of fumigation.

CLINICAL RECORDS.

Hospital Notes. By T. H. Babington, M.D., T.C.D.; M.R.I.A.; Surgeon Londonderry County Infirmary.

LONDONDERRY CITY AND COUNTY INFIRMARY, AND CITY FEVER HOSPITAL.

REPORT FOR THE YEAR 1868.

Numerical Return of Patients Admitted into and Treated in the City and County Londonderry Infirmary for the Year 1868.

Patients Remaining 31st December, 1867,	65	
Admitted,	620	685
Discharged Cured and Relieved,	593	
„ Died,	40	633
Remaining 1st January, 1869,		52

City Fever Hospital Report for 1868.

Patients Remaining 31st December, 1867,	6	
Admitted,	90	96
Discharged Cured,	82	
Died,	10	92
Remaining 1st January, 1869,		4

Number of Beds in Hospital, - Males, 48; Females, 24—Total, 72
Number of Beds in Fever Hospital, - - 20; „ 12— „ 32
Total number of days passed by Patients in Hospital, - - 19,951
„ „ „ in Fever Hospital, - 2,082

Numerical Abstract of Cases of Accidents and Diseases, for the Year 1868.

ACCIDENTS.	NO.	ACCIDENTS.	NO.
Bite of Dog,	3	Fractures of Leg,	9
Burns and Scalds,	11	„ Thigh,	3
Dislocations of Elbow,	1	„ Ribs,	2
„ Hip,	2	Injuries of Head,	3
„ Shoulder,	6	„ Spine,	1
„ Thumb,	3	General Injuries, Wounds, and Contusions,	87
Fractures of Arm,	18	Drowning,	2
„ Clavicle,	5		
„ Lower Jaw,	1		

DISEASES.	NO.	DISEASES.	NO.
Aneurism,	1	Diseases of Skin,	35
Anthrax,	2	Erysipelas,	2
Abscess,	20	Hernia,	11
Cancer,	11	Rheumatism,	29
Drunkenness,	5	Scrofula,	6
Dropsy,	11	Tumours,	3
Diseases of Brain, &c.,	9	Whitlow,	2
„ Bones and Joints,	23	Ulcers,	35
„ Eyes and Ears,	14	Tetanus,	1
„ Heart,	14	Other Diseases,	44
„ Lungs, &c.,	88	Fever,	90
„ Stomach, Bowels, &c.,	59	Diseases of Urinary Organs,	38

Accidents and Diseases which proved fatal.

		NO.		NO.
Accidents	Burns and Scalds,	2	Disease of Heart,	4
	Injury to Spine,	1	Cancer of Stomach,	1
	Gun-shot Wounds,	1	Diarrhea,	1
	General Injuries, &c.,	2	Enteritis,	1
Albuminuria,		2	Fever,	10
Aneurism,		1	Pneumonia,	2
Bronchitis,		4	Phthisis,	13
Disease of Brain,		1	Syphilis,	1
„ Bone,		2	Suppression of Urine,	1

	£	s.	d.
Average Cost of Hospital and Fever Patients, including all expenses,	2	11	9
Average Cost of Hospital and Fever Patients, exclusive of all Salaries, Wages, and Annuities, amounting to £568. 10s. 5d.,	1	17	2¼
Daily Cost of each Patient, including all expenses,	0	1	10
Daily Cost of each Patient, exclusive of Salaries, Wages, and Annuity, amounting to £568 10s. 5d.,	0	1	3¾

Burns and Scalds in a surgical hospital too often hold a prominent place—always troublesome, frequently dangerous and fatal. Two fatal cases came under observation; one lived seventeen hours from the occurrence of the accident. A man employed in a distillery dropped a bag into a boiling keive, and stepped in after it; he was picked out scalded as far as the pelvis. He was brought at once to hospital, but never rallied from the shock. In the second fatal case the injuries were more extensive—legs, abdomen, arms, thorax, and face, all scalded by the bursting of a steam boiler in a mill. He survived about thirty hours.

One of the Dislocations of the Hip was into the foramen ovale, readily

reduced by Sir Astley Cooper's directions, delineated in the plate in his work on fractures and dislocations. (*Quarto edition*).

A Dislocation of Shoulder was one of rare occurrence; the head of the humerus was lodged on the dorsum of the scapula.

All the Fractures of the Leg and Thigh were treated on the straight position, and the most simple appliances used to keep the limb in position, viz., a posterior splint, two chaff bags, and two side splints properly adjusted, and a foot board when necessary. Fractures of the thigh invariably treated with Liston's splint, or a slight modification thereof. I have never used a double-inclined plane.

One Fatal Case of Injury of Spine came under observation. A man aged 50, intoxicated, fell out of a cart, and (as was stated) the wheel passed over his neck. He was immediately brought to hospital, perfectly sensible, but powerless. He could not use his arms or legs, and was totally deprived of sensation from an inch below the clavicle. His breathing was abdominal. He died next morning, seventeen hours from the occurrence of the accident. The temperature of this man's skin was normal, and his pulse never above 58. *Post mortem* examination disclosed a fracture of fourth cervical vertebra. This case is mentioned not for any particular interest that the case affords, but I noticed in the *Dublin Medical Press and Circular* of March 3rd that at the meeting of the Surgical Society on the previous week a case of injury of the spine was brought under the notice of the society by Dr. Hamilton, of Steevens' Hospital, in which case the injury was of a similar nature, and the fracture was in same situation (fourth cervical vertebra). In Dr. Hamilton's case the temperature appears to have been greatly increased, so high as 106. On reading this case I called to mind a fatal case of fracture of spine which came under my care in Colerane Union Workhouse in 1849. A bricklayer building a tall chimney fell from top to bottom. He was completely paralysed, and could only move his head slightly; insensible from clavicles down; respiration abdominal; retention of urine. The accident happened on Friday, the 12th of October; on Monday the 15th large dark vesicles appeared on the soles and sides of his feet; on the 17th his urine became amoniacal, and bedsores commenced on Friday the 19th. He began to sink gradually, and died on Sunday night, the 21st, ninth day from the accident. Twelve hours before death his body became icy cold, his pulse fell to 36 in the minute, and the number of his respirations were eight in the minute. On *post mortem* examination there was a fracture through the body and transverse processes of the fourth cervical vertebra. I believe the preparation is in the Royal College of Surgeons' museum. It was placed there by my respected friend and former preceptor Dr. Hargrave, Professor of Surgery in the College.

In General Wounds, Contusions, and Gunshot Wounds three cases proved

fatal. The first fell out of a window in a pork-curing establishment; at once brought to hospital; senseless from concussion of the brain; compound fracture of left arm, simple fracture of right arm; severe contusion of left knee. I cannot describe the storm (I say surgical storm) through which this poor fellow passed. Wild delirium, irritative fever, rigors, suppurations, abscesses, vomiting, diarrhea, bedsores, wasting, and death on the sixty-fifth day from the accident. Truly Mr. Travers in his graphic work on constitutional irritation well described such cases.

The second case, one of incised wound into the bursa, above the patella, from which there was great hemorrhage, arrested by accupressure. This case terminated as the former. Their progress was too slow to call such cases pyemia. I am inclined to say they died from surgical fever, or constitutional irritation, and after much protracted suffering.

In the fatal case of gunshot wound, death was caused by mortification speedily following the injury.

Aneurism proved fatal by the bursting of the sac (aneurism of arteria innominata) into the œsophagus. The clavicle and portion of sternum were greatly eroded.

Cancer. — Eleven cases came under observation. One breast was removed, and so far is going on well, and that is all I can say in regard to ultimate success of operating for the scirrhus breasts. A fatal case of carcer of pylorus came under observation. I have preserved the stomach and parts, and the size to which the stomach was dilated and extended is almost incredible.

Phthisis, as usual, was very fatal.

Syphilis fatal in one case.

Suppression of Urine, noted as fatal, is not a delineation of the case. The patient was admitted into hospital late on Sunday evening. Stated she had not passed urine for four days. She complained of much pain. Every examination failed to detect any urine in the bladder. The vagina, rectum, and adjacent parts were a conglomerated mass of hard, unimpressible, non-elastic tissue. She died next evening under all the symptoms of urœmic poisoning. The *post mortem* examination revealed that the uterus and all its appurtenances were a hard, infiltrated, degenerated, scirrhus mass, filling up the lower part of the pelvis, and blocking up the ureters.

Hernia.—Eleven cases came under observation; nine were supplied with trusses. One incarcerated was treated with warm bath and large doses of opium. The tumour disappeared in the night. The patient was treated with Wutzer's apparatus, and with a most successful result. The eleventh case had strangulated hernia, complicated with hydrocele. The fluid having been evacuated, the operation was performed. The patient recovered perfectly after a severe attack of peritonitis, and several abscesses about the inguinal region and scrotum.

In operations on strangulated hernia I feel rather indifferent about an early fecal evacuation. I consider a grain of opium every fourth hour highly preferable to any purgative.

In the Cases of Acute Rheumatism I am led to place confidence in the alkaline treatment, sometimes accompanied with small blisters on the affected joints.

Tetanus.—An idiopathic case, caused by exposure to wet and cold. Nicotine was administered, but even in minute doses had to be given up, owing to the frightful depression it caused. Tincture of Indian hemp and Battley's sedative liquor of opium were freely administered with plenty of nutritious food, and liberal supplies of wine, under which treatment the patient (a boy aged 12) recovered.

On the Relation between Typhoid Fever and the Height of the Underground Water; (from various papers in the Zeitschrift f. Biologie.) Translated from the *Ugeskrift for Læger*, Copenhagen, January 30, 1869; by William Daniel Moore, M.D., Dub. et Cantab.; M.R.I.A., L.K.Q.C.P.I.; Honorary Fellow of the Royal Medical Society of Copenhagen.

We gave in a former number of the "Ugeskrift"[a] an abstract of an essay in the "Zeitschrift für Biologie" by Buhl, in which that writer endeavoured to demonstrate, with respect to Munich, a decided connexion between the variations which in a long period had taken place in the mortality from Typhus,[b] and the height of the underground water. It will be remembered that he based his results upon the dissections performed by him in the General Hospital, whereby he not only attained to an absolutely certain diagnosis, but at the same time was in a position, from the condition of the intestinal ulcers to fix the date of the occurrence of the disease. We shall briefly recapitulate the most important results he arrived at:—

1. The variation which takes place in the mortality from typhus in Munich, necessitates the assumption of a cöoperating cause, sometimes assisting, sometimes counteracting the specific cause of typhoid fever, and which must be considered as its quantitative side, as the basis of the extension and force of the disease.

2. Of all elements in Munich accessible to investigation, the oscillations in the underground water especially exhibit relations, unmistakably indicating their connexion with the spread and violence of typhoid fever.

3. So long as the underground water continues to rise, the number of fatal cases of typhoid fever steadily falls, and *vice versâ*.

[a] 3rd Series, Vol. iv., p. 41.

[b] The sequel will show that it is to the ileo- or abdominal typhus, or typhoid fever, exclusively, that the writer refers in this paper.—*Translator.*

4. The duration and rapidity of movements in the underground water, contain the measure of the violence and extension of typhoid fever.

The line upon which Buhl has here entered, has been received very differently, though most frequently with a certain reservation, and in Munich itself not merely with mistrust, but even with dislike. Nevertheless he has also met with important support from various scientific men,—a support which every subject deserves which, like this, is closely connected with the public weal. Thus Seidel has in two papers in the "Zeitschrift f. Biologie"[a] subjected the coincidence between the numbers of typhus cases and the varying height of the underground water in Munich to an accurate mathematical investigation, based on the principles of the doctrine of chances. He has in this manner arrived at essentially the same results as Buhl:—

1. The variation in the number of the cases of typhus compared with the variation of the underground water, indicates, after elimination of the period of the year, a coincidence, whence with a probability of 36,000 to 1 a connexion between the two phenomena is deducible.

2. All the investigations show, that when in Munich a month presents a greater rainfall than the normal according to the season, it will also be more probable that we shall find in it a diminution of the number of cases of typhoid fever than an increase.

3. If we would suppose the phenomena mentioned (the variation of the underground water and the number of typhus cases) to be dependent on a third unknown phenomenon, the height of the underground water, the quantity of the meteoric rainfall and the frequency of the cases of typhoid fever must be at the same time dependent thereon, and be brought into a certain agreement. Now as this cannot be the influence of the seasons, which is everywhere eliminated, no other plausible explanation remains but this, that under the local circumstances existing in Munich the water contained in the soil, when it is present in sufficient quantity, hinders or limits certain processes, whereon the frequency of the cases of typhus depends.

4. It is further evident, that these processes take place in the soil itself. Thus that an increase of the atmospheric rainfall exercises a favourable influence by saturating the porous earth with moisture, and not by a direct operation of the weather on the system, must necessarily follow from the facts, that this operation can be shown to extend even through months, and that the higher position of the underground water is in and by itself, accompanied by an equally favourable, or even still more evident action.

Willars Jessen[b] of Kiel has subjected Buhl's numbers to a similar

[a] 1 Bd., p. 221 and 2 B., p. 145.

[b] "Zeitschrift für Biologie," iii., p. 128.

mathematical test,—only he employed another method of calculation; he has arrived at the same result as Seidel.

Thomas of Leipsic[a] tested Buhl's and Seidel's proposition with reference to the monthly mortality from typhus in Munich and found it quite confirmed.

In the first number of the fourth volume of the "Zeitschrift für Biologie," Max Pettenkofer has laid hold of the question partly to oppose the objections expressed both privately and publicly against the propositions laid down by Buhl and Seidel, partly to direct attention to and to explain a chart constructed by "Polizeiingenieur" Wagus from the lists supplied by all physicians. This chart, in addition to other satistics of mortality in Munich, gives also the mortality from typhus for each month in the period from 1850 to 1867. Moreover he has given in curves the monthly rainfall, and, since March, 1856, at the same time the height of the underground water according to Pettenkofer's observations. It will be remembered that Buhl has treated only of the period 1856-64, while Wagus takes in both the time before (1850-56), and the time after Buhl's observations, namely, from 1864 to the close of 1867. We are thus in a position to try, whether the results deduced by Buhl and Seidel from their materials up to 1864, hold good also in the following period. This is in fact the case; there is a strict agreement between the curves constructed by Buhl and Wagus, not merely so far as the great epidemics are concerned, but also with reference to the yearly and monthly mean mortality of typhoid fever, the greatest mortality being found in both in February, and the least in October. The result shows at the same time, that Buhl was justified in looking upon the mortality in the general hospital as a type of that in all Munich. That it is not upon the season that the varying mortality of typhus depends, appears also from Wagus' chart; thus for example in January, 1858, the deaths from typhoid fever were 97; and in January, 1867, they were 10.

We are naturally embarrassed in seeking the cause of this varying mortality in typhoid fever. The causes generally assigned in daily life and in practice, as bad food, errors in diet, cold, want of cleanliness, damp and insufficient ventilation of rooms, &c., do not explain why in January, 1858, so many, and in January, 1867, so few died of typhoid fever. All these conditions, which are all mentioned by Buhl, have certainly a hygienic signification both for the particular individual and for the course of an epidemic; but they are not liable to such changes as the extension and violence of the typhoid fever, which therefore cannot be dependent on them; they indicate no causal connexion with the flow or ebb of the specific course of typhus which is still unknown to us, and the existence of which is assumed only from its effects.

[a] "Archiv der Heilkunde," vii., p. 385.

If we compare on Wagus' chart the curve, indicating the mortality from typhus, with that exhibiting the yearly rainfall, we observe a coincidence resembling that which Seidel has demonstrated, the one curve ascending when the other falls, and *vice versâ*. This is, however, far from being invariable,—it presents considerable exceptions. But it appears that we might assume as a rule, which in every case holds far better than any of those previously admitted, that an increase of the atmospheric rainfall is attended with a diminution in the number of typhus cases. But now in Munich in the years 1856-'57-'58, the rainfall was about the same, namely, 282, 312, and 306 Parisian lines. If the rainfall in and by itself had any influence, we might in these years expect about the same number of typhus cases; but this is far from being the case; from November, 1857, until May, 1858, the most severe typhus epidemic of all raged in Munich.

We might also assume that it was the rainfall of the preceding year which was the agent, and that therefore the most severe epidemics of typhoid fever might follow the driest years. 1856 and 1865 were the two driest years, with respectively 282 and 255 Parisian lines of rain; the first year was followed by a much slighter epidemic than the second, which therefore seems to agree with what has been assumed. But from 1856-57 the rainfall rises from 282 to 312 lines, and nevertheless the most severe epidemic of all now ensues, even far surpassing that from 1865 and 1866, which yet followed the driest year of all with only 255 lines of rainfall. All these facts have likewise been all quoted and investigated by Buhl; but Pettenkofer has detailed them at greater length, for which reason we have introduced them, notwithstanding the repetition.

Pettenkofer now comes at last to the underground water, as the atmospheric rainfall cannot, without the aid of it, which indeed ultimately depends thereon, be brought into any true connexion with the epidemics. This underground water seems, however, to have caused people some trouble notwithstanding Pettenkofer's accurate definition, and many will always see something mysterious in it. The underground water is a definite state of moisture in the porous soil; where the pores in such a soil are filled partly with air, partly with water, Pettenkofer calls the soil damp; when the pores in a layer of the soil are filled with water alone and all air is expelled, underground water is present. The state of the underground water is therefore a kind of standard, so to speak a zero, for the moisture of the ground, and the rising and falling of this standard, which takes place beneath the surface, is the subject of observations of the underground water.

From a hygienic point of view we are concerned only with the underground water found in the upper, porous layer of earth. Now where this porous layer is so deep, that all wells have their supply of water from it, the state of the water in the wells affords the measure of the height of the underground water. This holds good perfectly so far as

Munich is concerned; but in other places, where the nature of the soil is different, the state of things may also be quite different. Where for example there is a waterproof layer of marl or clay under a comparatively thin, porous layer, so that the former must be perforated before we meet with sufficient water, the state of the water in the wells of course cannot indicate the height of the underground water, which contribute only little or nothing to the supply of the wells. We must therefore accurately investigate the state of things in each individual place, if we wish by our measurements to obtain results of really scientific value.

Pettenkofer further shows, that the height of the underground water in different years and at different seasons does not depend directly on the yearly rainfall, and that the same rainfall may act quite differently in different localities, even with soil of the same nature. In this latter respect many elements have an influence: 1. The quantity of rain; 2. how much of the latter penetrates the earth or evaporates on the surface; 3. how much is retained by adhesion in the superior, dry layer or again evaporates; 4. how much flows to the locality on the waterproof substratum from higher points; and finally, 5. what fall has the waterproof stratum on which the water collects.

The first element, the rainfall, is the most important, but may be greatly modified by the others; when the layer lying over the underground water is very much dried up, it may rain for several weeks and the underground water may still continue to sink. If this layer, on the other hand, is already very damp, and the superficial evaporation be only very slight, almost every drop sinks down to the underground water.

Prof. Pfaff of Erlangen has for a year undertaken many instructive investigations respecting the penetration of the rainfall into the soil. He has shown of what great importance the depth or extent of the porous layer resting on the waterproof stratum is; that a porous layer four feet in depth, has a totally different signification from one of half a foot or a foot. These investigations will soon be published in the "Zeitschrift f. Biologie." Pfaff has found that of the summer half-year's rainfall only $7^{\circ}/_{\circ}$ penetrates down to the waterproof layer, when the porous layer is half a foot in thickness, while $37^{\circ}/_{\circ}$ does so, when that layer is four feet in thickness. This paradox is explained by the drying from superficial evaporation; the thicker layer receives during evaporation much water from below, and can therefore never be so much dried up that it can absorb the subsequent gradual rainfall so completely as the thin layer.

If we now inquire in the chart published by Wagus, when, on the whole, the lowest position of the underground water was observed in Munich, it appears at once, that this was contemporaneous with the most violent epidemic of typhoid fever in the period investigated, namely, 1857-58. The next lowest state of the underground water corresponds to the next most severe epidemic, 1865-66. And if we apply a counter-test and

inquire when the underground water stood highest, we find that it was in 1867, the very year in which we had the smallest number of typhus cases, namely 96, the lowest number observed in Munich since 1856, when the observations of the underground water commenced. Such a coincidence cannot possibly be attributed to mere chance.

The year 1867 shows also that we cannot from the rainfall directly deduce the height of the underground water. In 1866 374,‴ and in 1867 406‴ fell in Munich, and so early as April in the last named year the highest point of underground water was attained; but in 1859 392,‴ and in 1860 416‴ fell there, and it was not until July, 1861, that the highest point of the underground water was reached.

The chart, therefore, constructed by Wagus from entirely different materials, confirms in every respect the law previously indicated by Buhl and Seidel, and corroborated by Jessen and Thomas. And it at the same time shows very distinctly, that the atmospheric rainfall influences the cause of typhus only so far as it alters the height of the underground water, as also Seidel and Buhl have established.

To attain to perfect certainty it is however necessary that observations of the same nature as those carried out at Munich should be made also in other places visited by typhoid fever. Accurate statistics of typhoid fever, and in connexion therewith a continued investigation of the rainfall and heights of the underground water, are the requisites; and we see already from the facts obtained in Munich, that it is only through a period of several years that we can calculate on decisive results and on a discovery of the local rhythm. It is not to be expected that the results should everywhere be the same as in Munich. Thus much is however ascertained from other seats of typhus, that there also the severest epidemics in general follow the driest years. This was the case with the epidemic at Windsor, which became so notorious, in consequence of its having carried off the Prince Consort. The same has been reported to Pettenkofer respecting the frequently recurring epidemics of typhoid fever in Liverpool. Dr. Pfeiffer has communicated similar observations as to Thuringia, and Dr. Jürgensen has done the same for Kiel. The opposite has been reported for Königsberg, namely that typhoid fever is there most severe in damp years. If this be confirmed it ought not, thinks Pettenkofer, to be looked upon as contradictory to the result obtained from Munich. But he is of opinion that such cases may, on the contrary, forward the matter, inasmuch as they will lead to an explanation of the circumstances which are the same in both places, but which in Königsberg come into action when the underground water rises; in Munich on the contrary, when it falls.

Pettenkofer warns us especially against too hasty and precipitate conclusions, and recommends an accurate and careful investigation of the facts, before we look upon our results as certain. He likewise warns us

against the old mistake in medicine, of ascribing without inquiry the same disease now to one, and again to another cause, in one case blaming the soil and its humidity, in another cucumbers or brandy, or when no dietetic error is known, uncleanliness, poverty, or fear, in a word, assuming everything and therefore nothing, as essential. This method may indeed be convenient, especially in practice, when it can never lead us into embarrassment; but it is incompatible with the spirit of science; and if medicine is, and is to be a science, it must lay aside this habit, which has become a practice, not to say second nature; and we must say only:—"in such a case this has occurred instead of that," when we can really state how and why the one may produce the same effect as the other.

An accurate diagnosis is also necessary, as it is only ileo- or abdominal typhus which is in question, and not other diseases, unfortunately often confounded with it.

The theory of the underground water can, according to our present knowledge of facts, rest only on weak and arbitrary hypotheses. The underground water alone with its rising and falling can evidently not produce any disease,—it can in any case only conditionally affect their occurrence. Whether this alternation in the moist condition of the soil effects the formation of vegetable or animal organisms, putrefaction or depreciation of the water or of the air, is as yet undecided. Only thus much Pettenkofer believes may positively be admitted, that it is essentially an organic process, which goes on in the soil; but where in the soil these organic matters occur, and how the process goes on, remains to be investigated. That the process does not take place in the water itself is evident from the fact that this is the very thing which checks it, while drying up promotes it. It seems incomprehensible, how it can be asserted, that it is not the moisture in the soil, the underground water, but on the contrary the atmospheric moisture, the rain, which has an influence on typhoid fever and cholera, while we nevertheless may often see, how in one and the same town (for example Weimar), one part of the town is visited by typhoid, while the other parts are free, or, as in Nürnberg, the one side of the town is devastated by cholera, while in the other part only sporadic cases are met with. Are we really to believe, that more rain can fall in one part of the town than in the other?

Little admissible as is the assumption, that specific typhus is developed in the water, its reference to the surface is, according to Pettenkofer, equally inadmissible. If the theory that it is an organic process be correct, we cannot suppose, so far as Munich is concerned, that this takes place on the surface of the soil, for experience shows, that the severest epidemics have occurred precisely at the coldest season, when the earth has often been frozen for weeks consecutively. We cannot imagine any organic process which should be active in the middle of winter, in the

hardest frost. It will be necessary at least provisionally to place the focus of typhoid fever beneath the line of frost of the soil.

But if we place the seat of the formation of the typhus germ beneath the surface, we must also account for how it reaches us. Under ordinary circumstances we are connected with the underground layer only in two modes, namely, through the water in our wells and springs and through the air, which permeates the porous layer. Many look upon the former as the only probable mode, and this is Pettenkofer's view, and several well observed facts in the progress of cholera in England place it beyond all doubt, that the germs of these diseases may be disseminated through the water, though they are not developed therein; but for this a peculiar soil is required. The typhus-corpuscles formed in the porous, damp soil may also pass over into the underground water, and after being brought up to the surface through wells and springs, may be further developed and swallowed by us.

We know indeed, that the air above and beneath the surface of the earth may hold numerous organic germs floating in it, and carry them with itself though very narrow canals. Now if the air in the porous soil, and the open atmosphere be partly of a somewhat different composition, partly of a somewhat different temperature, the former will constantly mix with the latter, and they will thus be able to exchange matters.

Very few, however, have a correct idea of the porosity of the soil on which our dwellings stand, and of the motion of the air therein. If we strongly compress in a vessel, any quantity of the soil on which Munich stands, after having first dried it at 212° F., until no further diminution takes place, and then pour on water until all interstices are completely filled and all air driven out, the weight of the quantity of water used will indicate the degree of the porosity of the soil. With respect to Munich at least $\frac{1}{3}$ of the soil consists of pores or interstices, which are completely filled with air so long as the ground is dry; the buildings in Munich therefore rest on a soil of which at least one-third is atmospheric air. This to many will appear very strange, especially with respect to Munich, where one can work in the hard and firm crust of the earth only with pickaxes. But it will perhaps sound less incredible, when it is known, that a well burnt brick has 20% of interstices, filled with air, and that one can blow through it. Now if we even look upon the soil as a kind of lid to what lies below it, we must not forget that this lid closes only two-thirds of the opening and leaves one-third free. We cannot therefore in fact wonder more that such germs as in general may be carried in the air, can reach the surface from considerable depths in the soil, than that the smuts from our lamps and candles which stand upon the table, should collect on the ceiling, or that we may meet with the mineral constituents of the soil in the top of a tree one hundred feet high.

Although the author, as has been stated, will not for the present deny,

that the cause of typhoid fever may be conveyed in water, especially in drinking water, he thinks that according to our present experience and the investigations which have been made we must look upon the air as the most usual and the most important medium of the communication of the typhus matter. An attempt has been made to explain Buhl's observation, that a low state of the underground water promotes, while a high state of the same is unfavourable to the occurrence of typhoid fever, by supposing that under the former circumstance the wells should contain more impure water, while this more concentrated extract of the soil is diluted under the latter. Plausible as this theory may at first sight appear, it has nevertheless very rarely proved correct. Accurate investigations at different heights of the water in wells have shown, at least in Munich, that spring water in damp weather, that is when the underground water is high, contains a larger quantity of solid constituents than in dry weather.

Theories which point to a certain influence of the wells are readily entertained and supported, because the latter must be essentially affected by the nature of the surrounding soil. Still in Munich we have never succeeded in demonstrating a positive influence of a particular kind of drinking water. Thus there is still the same supply of water as during the violent typhus epidemic of 1865-66, and yet there is at present scarcely any typhoid fever ; in 1861 the drinking water was even much worse than in 1865-66, and yet there were then very few cases of typhoid fever. The author therefore considers the question of the influence of drinking water to be still *subjudice*, and he recommends that more weighty proofs should be sought for in its favour, than have as yet been brought forward.

MAURICE H. COLLIS, M.D., Dub.

FELLOW AND EXAMINER IN SURGERY ROYAL COLLEGE OF SURGEONS; SURGEON TO THE MEATH HOSPITAL; PRESIDENT OF COUNCIL IRISH MEDICAL ASSOCIATION.

DIED MARCH 28, 1869, AGED 45 YEARS.

The death of Mr. Collis was so sudden and so totally unexpected, he was so well known and so highly esteemed both by the members of his own profession and by the public, that the melancholy event produced an almost unexampled sensation, and was immediately noticed not only in the weekly medical journals, but in the daily papers, and we have little doubt that everyone of our readers has already heard of it. A valued contributor both of original articles and of reviews to this Journal, we cannot allow him to pass from amongst us without a special notice.

Another in the long list of those who, within the past few years, have, in this city, fallen in the breach, cut down by disease contracted during their attendance on hospital patients, the tale of his professional life is soon told. The son of the Rev. Robert Collis, Rector of Kilconnell, in the diocese of Clonfert, he received his general education at the University of Dublin,[a] and having been apprenticed to his uncle, the late Mr. Maurice Collis, he carried off the Senior Surgical Prize at the Meath Hospital in 1846, and became a licentiate of the Royal College of Surgeons in 1847. From the outset he laboured assiduously to make himself an accomplished surgeon in the only way in which an accomplished surgeon can be made—acquiring the utmost familiarity with anatomical details, and the greatest readiness in the use of the knife, by spending years in the dissecting-room, first as a student, and subsequently as a demonstrator. After he had visited the medical schools of London and Paris, his uncle retired from the Meath Hospital in his favour, and in 1851 he was placed on its surgical staff. Availing himself to the utmost of the opportunities he thus enjoyed, identifying his own interests with those of the institution in which he

[a] Those who were students in Trinity at this time will remember his poem, "Fabri Cassus," or "The Wrongs of Wright," a witty description of the misfortunes which overtook a college porter in his cups. The readiness in composition and literary power shown in this early effort was one of the most striking of Mr. Collis's talents.

laboured, he exerted himself to the utmost to perfect the hospital accommodation, and zealously discharged his duty both to the patients and to the pupils. Seeking the ambitious position of a consulting and operating surgeon at a time when many senior men of European reputation were still in full vigour in this city, the most brilliant qualities could hardly have secured immediate success; but honest work, if life is spared, brings its reward sooner or later, and for the past few years Mr. Collis's position as a surgical authority was becoming steadily established, and he was beginning to reap fully the material rewards of his industry, when it pleased Him who orders all things aright that he should rest from his labours.

His work on "The Diagnosis and Treatment of Cancer, and Tumours analogous thereto," is a standard book; and, besides very frequent contributions to the surgical and pathological societies, he published in this Journal most valuable articles on the various congenital deformities of the mouth, on the treatment of anthrax, and on the subject to which he had lately devoted special attention—operations upon the upper jaw.

In the circumstances of Mr. Collis's death we have a melancholy illustration of the imminent risk to which the members of our profession expose themselves who continue to follow their avocations when failing health renders them specially liable to suffer from the animal poisons with which they unavoidably come in contact. Beyond suffering at times from rather troublesome dyspepsia, his health was good up to the beginning of the past winter; during it, however, he had a succession of catarrhal attacks, in which the lining membrane of the trachea appeared to suffer most, as he had frequent hoarseness, and sometimes loss of voice. He felt that his health was precarious, and expressed to one of his friends his determination not to work so hard. Since Christmas he had cough. At first, taken up with his professional cares, he paid no attention to it, but early in March, alarmed by its persistency, he had his chest examined. The existence of plastic bronchitis being suspected, he noticed the expectoration, and found that it contained branched casts of the tubes. On this discovery he submitted himself to a very mild mercurial course; but in spite of the advice of his professional friends, continued to attend his hospital and his private patients.

On the evening of Friday, March the 19th, he was present at a meeting of the Surgical Society, but looked ill. On Monday, the 22nd, he operated for the removal of a malignant growth

connected with the superior maxilla. Towards the end of the operation he took the knife in his left hand, which he used with great readiness, and while holding a portion of the mass in his right he wounded slightly one of the fingers of that hand. He was noticed to be unusually fatigued after the operation, and in the afternoon expressed his fear that he had got some poisonous matter into the wound. On Tuesday he saw his patients as usual, but while at dinner had a slight shivering. Thinking this might be the commencement of some febrile attack, he remained at home on Wednesday. Between three and four on Thursday morning sudden alarm was created, as he was heard coughing as if choking. In a few minutes he was seen by one of his medical friends, who found his face rather pale, his eyes suffused, the surface of the body pungently hot, and the pulse very rapid; he seemed quite unconscious. With difficulty he was made to swallow a little brandy and water, while the application of ammonia to the nape of the neck, roused him somewhat. Early in the morning he was seen by the eminent physicians, who were his colleagues in the Meath Hospital, together with Mr. Porter and Dr. Jameson. It was then ascertained that during Tuesday, and still more during Wednesday, he had complained of pain about the right shoulder. On examination, a barely appreciable fulness was noticed posteriorly between the scapula and the spine, and here there was a very indistinct emphysematous crackling. When roused by speaking, and begged to tell if he was suffering anywhere, he pointed to the right axilla, where, as well as in the infra-axillary portion of the chest wall, as compared with the corresponding regions on the left side, there appeared to be some fulness; but no approach to definite swelling, no redness nor trace of inflamed lymphatic could be discovered. The small cut was visible in the pulp of the finger, but surrounding it was no inflammatory change. A large poultice was applied behind the shoulder and in the axilla; bark and chlorate of potass were administered, and beef-tea and Madeira freely given. During the day his aspect was that of a person over whom the stupor of a fever was deepening. He hardly spoke, and gave little aid when it was necessary to alter his position, while during the early part of the night there was considerable excitement.

On Friday he showed occasionally a consciousness of the nature of his illness, remarking at one time that the cut was a little one, but there was blood poisoning. He spoke little, intimating his wants by gestures. He was evidently thirsty, but the tongue was

moist and clean. The pulse was 120, more feeble than on the previous day. The respirations had increased in frequency. The temperature was 105° Faht. The urine, which was abundant, had a density of 1020, was loaded with lithates, and distinctly albuminous. He took readily his beef-tea and Madeira, and boluses of quinine and camphor. About seven in the evening he had a violent trembling, but without any fall of temperature; indeed, judged roughly by the hand, the surface felt more pungently hot than it had previously done. As the trembling seized him he pressed his left hand to the root of his neck, on the right side, and exclaimed that it had gone above his clavicle, it had gone into his neck. In this situation there was now appreciable but quite undefined fulness. The night was restless; for the most part he noticed little what was passing, at times, however, he seemed clearer, and on one occasion asked a pupil, who was unremitting in his attention to him, how was the patient on whom he had operated, and whether the plugs had been removed.

On Saturday morning the voice, which had all along been feeble, was completely lost.[a] He had a good deal of cough, and brought up some rusty expectoration. Respiration had become laboured and frequent, and dulness on percussion and tubular breathing were found over the right lung behind. The pulse had increased in frequency, but fallen in strength. The temperature of the body, though still above that of health, was less than on the previous day. The urine now contained a much larger quantity of albumen.

In the afternoon there was greatly-increased swelling, spreading over the neck and the front of the chest, and burying the clavicle; there was also an increased fulness at the inferior angle of the scapula. He intimated very plainly that he wished some attempt made to find matter, and though all were agreed that no evidence of fluid existed, after an anxious consultation, Mr. Porter, assisted

[a] The explanation of the aphonia, which was very marked, is difficult. We are indebted to Dr. Arthur W. Foot for drawing our attention to an article by Dr. Ogle in the third volume of St. George's Hospital Reports, in which the frequent occurrence of loss of speech, after the bite of venomous snakes, is mentioned, and explained on the supposition that the poison produces spasm of the middle cerebral arteries. The explanation offered at the time by Dr. Stokes, that it was due to pressure on the pneumogastric, or its recurrent branch, by effusion, seems, in Mr. Collis's case, the more probable one, as it was noticed that several words were spoken distinctly immediately after he was turned completely on the left side; but the restoration of speech was temporary, though during the remainder of his illness he uttered, evidently with extreme effort, a few words.

by Mr. Wharton, made an incision below the outer third of the clavicle, and carefully divided the structures till he reached the rib. Some bloody serum, but nothing else, escaped from the wound. An incision made at the inferior angle of the scapula gave no other result. The hand and forearm continued perfectly without trace of lymphatic swelling or inflammatory change. During the evening the gradually increasing respiratory distress, the falling temperature and failing pulse, indicated that from the ministrations of affection and the efforts of skill no aid could come to the sufferer, and he entered into his rest on Easter morning, the 28th of March.

INDEX

TO THE FORTY-SEVENTH VOLUME.

Abnormalities of serous membranes, L. Tait on, 85.
Acetabulum, fracture of, 203.
Acupressure, Pirrie and Keith on, *Rev.*, 177.
Albuminuria, early sign of, 426—after scarlatina, 487.
Ammonium, bromide of, action of, Purser on, 334.
Anatomical Memoirs of John Goodsir, *Rev.*, 152.
Anderson on skin diseases, *Rev.*, 393.
Aneurism of aorta, Lyons on, 205—of coronary artery of stomach, Cuming on, 469.
Antiseptic treatment, William MacCormac on, 52.
Aphasia, pathology of, 420—case of, 483.
Aphonia, hysterical, treated by mercury, 320.
Artery compressor, George H. Porter on, 8.
Ataxy locomotor, Laycock on, 257.
Atthill, Lombe, on retroflexion of the uterus, 39.
Auscultation of œsophagus, 424.

Babington hospital reports, 493.
Barton, J. K., the pathology and treatment of syphilis, chancroid ulcers and their complications, *Rev.*, 114.
Bastian on cirrhosis of lung, 421.
Bell, manual of operations, *Rev.*, 201.
Bennett, Edward H., on fracture of spine, 210—on ovarian tumour, 214—on fibrous tumour of uterus, 218.
Bladder, rupture of in female, Collis on, 223.
Bone, regeneration of, Ollier on, *Rev.*, 133 — sub-periosteal evacuation of, Sédillot on, *Rev.*, 133.
Braidwood on pyemia, *Rev.*, 390.
Brain, degeneration of the ganglionic cells of, C. K. Hoffmann on, translated by W. D. Moore, .
Breast, M'Donnell on cystic tumour of, 208.
Bright's disease, T. Grainger Stewart on, *Rev.*, 143—George Johnson on, *Rev.*, 143.
Broca's theory of aphasia, 420.
Bromide of Potassium, Purser on, 321.
Brown-Sequard on treatment of epilepsy, 417.
Brunton on digitalis, *Rev.*, 181.
Buccinator muscle, paralysis of, 418.

Cameron, Charles A., lectures on the preservation of health, *Rev.*, 167—on the therapeutic properties of ferric iodate, 354.
Carbolic acid dressing, William MacCormac on, 52.
Cataract, Wolfe on, *Rev.*, 376.
Cerebro-spinal fever, 480.
Chemistry, Fownes' manual, *Rev.*, 199.
Children, normal temperature of, 415.
Churchill Fleetwood, jun., on epidemic of fever at Simons Town, 62.
Circulation fetal, MacDonald on, *Rev.*, 152.
Circulation of blood in the horse, rate of, *Rev.*, 196.
Cirrhosis of lung, pathology of, 421.
Cold applications in typhoid fever, 414.
Collis, M. H., on cancer of penis, 219—on exfoliation of tibia, 220—on rupture of bladder in female, 223—memoir of, 507.
Colon, scirrho-contracted, Hayden on, 206.
Conjunctival ecchymosis, significance of, 483.
Conjunctivitis, granular, 382.

Cork Pathological and Medico-Chirurgical Society, 475.
Cricoid cartilage, fracture of, 307.
Cuming, report on practical medicine, 413—on aneurism of coronary artery of stomach, 469—on disease of spinal cord, 471.
Cummins on intestinal obstruction, 475.
Curara, Voisin and Liouville on the properties of, 189.
Cutaneous neuroses, H. S. Purdon on, 98.

Degeneration, fatty, 413.
Dentistry, archives of, *Rev.*, 197.
Diabetes, Pavy on, *Rev.*, 404.
Digitalis, Brunton on, *Rev.*, 181.
Diphtheria, D. C. O'Connor on, 241.
Dissection, Holden's manual of, *Rev.*, 200.
Drainage tube in gluteal abscess, 373.
Dropsy after scarlatina, 489.
Duncan, J. F., case of effusion of blood on left hemisphere of brain, with paralysis of right arm, 221.
Dyspepsia, treatment of, 375.

Ears, hemorrhage from, 313.
Electricity, medical, the practice of, by G. D. Powell, *Rev.*, 200.
Empyema limited on right side, Hayden on, 225.
Entropion, treatment of, 389.
Epilepsy, treatment of, 417.
Erysipelatous inflammation, treatment of, 427.
Evans on non-officinal drugs, *Rev.*, 411.
Extra-uterine fetation, 464.
Eyelids, emphysema of, Dr. Van Dieren on, translated by W. D. Moore, 252.
Eyes, hemorrhage from, 313—recent works on diseases of, *Rev.*, 381—tumours of, 389.

Fagge on intestinal obstruction, 426.
Fatty degeneration, 412.
Femur, luxation of, with fracture of acetabulum, J. Hamilton on, 203.
Ferric iodate, therapeutic properties of, Cameron on, 354.
Fever at Simons Town, Fleetwood Churchill on, 62—puerperal, E. Kennedy on, 269—typhoid, treatment of, 413—etiology of, 497.
Fetal circulation, MacDonald on, *Rev.*, 152.
Finlayson on normal temperature of children, 415.
Fistula, vesico-vaginal, 467.
Forceps, use of in labour, 458.
Fownes, manual of elementary chemistry, *Rev.*, 199.
Fox on skin diseases, *Rev.*, 393.
Fracture of fibula, R. L. Swan on splint for, 50—of spine, E. H. Bennett on, 210—of neck of femur, R. L. Swan on, 213—depressed of skull, T. C. Shinkwin, 230—of larynx, Stokes on, 307.

Garrod, Alfred Baring, essentials of materia medica and therapeutics, *Rev.*, 168.
Gay, on varicose diseases of the lower extremities, *Rev.*, 192.
Gerhart on treatment of valvular disease of heart, 421.
Girard on herniotomy without reduction. *Rev.*, 172.
Gluteal abscess, drainage tube in, 373.
Glycogenesis, theory of, 405.
Gonorrhea, Morgan on treatment of, 358.
Goodsir, John, anatomical memoirs of, *Rev.*, 152.
Grimshaw, T. W., thermometric observations on pneumonia, 335.

Halton, Richard J., cases in practical medicine and surgery, 368.
Hamburger on auscultation of œsophagus, 424.
Hamilton, John, on luxation of head of femur with fracture of acetabulum, 203.
Hardy, Samuel Little, memoir of, by M'Clintock, 230.
Harris, Richard, on ovariotomy, 81—on sub-peritoneal fibrous tumours, 84.
Hayden, case of scirrho-contracted colon, 206—on limited empyema on right side, evacuation in right hypochondrium, 225.
Head, injuries of, R. J. Kinkead on, 90.
Headland, manual of materia medica and therapeutics, *Rev.*, 168.
Health, preservation of, lectures on, by Charles A. Cameron, *Rev.*, 167.
Heart, valvular disease of, treatment of 421—polypi of, diagnosis of, 422.
Hemiplegia, paralysis of buccinator in, 418.
Hemorrhage from ears, eyes, &c., Law on, 313.
Hernia, new operative proceeding in strangulated, Girard on, *Rev.*, 172.
Herpes zoster, treatment of, 396.
Higginbottom on nitrate of silver, 427.
Hildige, J. G., on granular ophthalmia and pannus, 78.
Hill, Berkeley, on syphilis and local contagious disorders, *Rev.*, 114.
Holden, manual of the dissection of the human body, *Rev.*, 200.
Hughlings-Jackson, J., disease of the nervous system in the subjects of inherited syphilis, *Rev.*, 114.
Hydrocephalus, Johnston on, 467.
Hypodermic injections, mode of using, 380.

Hysteria, interruption of pulse-respiration ratio in, 317—nature of, 320—aggravated case of, 374.

Injector, continuous, Morgan on, 358.
Impetigo contagiosa, 399.
Insolation, William Nolan on, 72.
Institutes of Medicine, by Martin Payne, *Rev.*, 201.
Intestinal obstruction, 426, 475.
Iodide of potassium, action of, Purser on, 334.
Iron, iodate of, sesqui-oxide of, Cameron on, 354.

Jaw, excision of lower, 474.
Johnson, George, on Bright's disease of the kidney, *Rev.*, 143.
Johnston, David, on hydrocephalus, 467.

Keith on acupressure, *Rev.*, 177.
Kennedy, Evory, on zymotic diseases, especially puerperal fever, 269.
Kidd, George H , on uterine polypi, 10—on sea-tangle tents, 13 — on menorrhagia, 18, 26—report on obstetric medicine and surgery, 452.
Kidney disease, early sign of, 426—Johnson and Grainger-Stewart, on, *Rev.*, 143.
Kinkead, R. J., on injuries of the head, 90.
Knee-joint, Massy on diseases of, 363.

Labour, tedious and difficult, management of, 453.
Lancereaux on syphilis, *Rev.*, 114.
Larynx, fractures of, Stokes on, 307.
Laurocerasi aqua, investigations with respect to, J. Broeker, translated by W. D. Moore, 250.
Law on hemorrhage from the ears, eyes, &c., 313.
Laycock on locomotor ataxy, 257.
Lesley on man's origin and destiny, *Rev.*, 152.
Lithotrity, George H. Porter on, 1, 5.
Little, James, on syphilitic tumour of the dura mater, 222.
Liver, abscess of, Lyons on, 216.
Londonderry Infirmary, report of, 493.
Lortet, M. J., on the rate of the circulation of the blood in the horse, *Rev.*, 196.
Lower extremities, diseases of, Gay and Spender, *Rev.*, 192.
Lung, cirrhosis of, Bastian on, 421.
Luschka on situation of the stomach, 425.
Lying-in Hospitals, statistics of mortality in, 294.
Lyons on aneurism of aorta, 205—on laryngeal phthisis, 213—on abscess of the liver, 216.

MacCormac, William, on the antiseptic treatment of wounds, 52—on excision of lower jaw, 472.
M'Clintock, memoir of Dr. Hardy, 231—case of labour subsequent to cure of of vesico-vaginal fistula, 467.
Macdonald on materia medica, *Rev.*, 411.
MacDonald, William, on the fetal circulation, *Rev.*, 152.
M'Donnell, Robert, on cystic tumour of the breast, 208.
Macnamara on diseases of the eye, *Rev.*, 376.
Man's origin and destiny, Lesley on, *Rev.*, 152.
Massy on disease of knee-joint, 363.
Materia medica, Royle and Headland, Garrod, Waring on, *Rev.*, 168—Waltuch on, 183.
Maternities, statistics of mortality, 295.
Maudsley on aphasia, 420.
Medicines, non-officinal, Evans on, *Rev.*, 411.
Menorrhagia due to uterine polypi, 18, 26.
Menstruation, vicarious, 313.
Midwifery, report on, 452.
Military ophthalmia, 387.
Moore, W. D., translations from Dutch archives of medical and physical science, 248—translation from *Ugeskrift for Læger*, 497.
Morgan's continuous injector, 358—statistics of venereal diseases, 360.
Mouth, deformities of, Ramsay and Coles on, *Rev.*, 197.

Natural selection, by survival of the fittest, L. Tait on, 102.
Nolan, William, on insolation, 72.

Obstetrical Society, proceedings of, 467.
Obstruction, intestinal, 426.
O'Connor, D. C., on diphtheria, 241.
Odontalgia, W. Parsons Shaw on, *Rev.*, 197.
Œsophagus, auscultation of, 424.
Ollier, L., on the regeneration of bone, *Rev.*, 133.
Operations, Bell's manual of, *Rev.*, 201.
Ophthalmia, granular, Hildige on, 78—Stellwag on, 382—contagious property, 386.
Oppert, F., on visceral and hereditary syphilis, *Rev.*, 114.
Ormerod on fatty degeneration, 412.
Ovarian tumour, E. H. Bennett on, 214—obstructing labour, 463.
Ovariotomy, Harris on, 81.

Paine, Martyn, the institutes of medicine, *Rev.*, 201.

Pemphigus in the form of an intermittent fever, Dr. Van Dieren on, translated by W. D. Moore, 251.
Pannus, Hildige on, 78.
Paralysis of Buccinator, 418.
Paralysis of right arm, J. F. Duncan on, 221—general, C. K. Hoffmann on, translated by W. D. Moore, 248—extensive, from disease of spinal cord, 471.
Parasitic affections, Anderson on, *Rev.*, 403.
Pavy on diabetes, *Rev.*, 404.
Pelvic abscess, cases of, 485.
Penis, cancer of, Collis on, 219.
Phthisis, Lyons on laryngeal, 213—with emphysema, Stokes on, 216—Wall on, 238.
Pirrie on acupressure, *Rev.*, 177.
Pneumonia, thermometric observations in, Grimshaw on, 335.
Polypi of heart, diagnosis of, 422.
Popham on cerebro-spinal fever, 480—the employment of vapour of sulphur by ancients, 489.
Poor Law Commissioners, annual report of, *Rev.*, 185.
Porter, George H., on lithotrity in the female, 1—on lithotrity in the male, 5—on an artery compressor, 8.
Powell, the practice of medical electricity, *Rev.*, 200.
Pregnancy, extra-uterine, 464.
Prurigo senilis, 397.
Puerperal fever, E. Kennedy on, 269—Sir J. Y. Simpson on, 392.
Purdon, H. S., on cutaneous neurosis, 98.
Purser on bromide of potassium, 321.
Pyemia, Braidwood on, 390.

Rees Owen on nephritic irritation, 426.
Rheumatism, acute, deep abscess of neck in, 368—Treatment of, Gull and Sutton on, 429—Da Costa on, 430—Banks on, 431—Beatty on, 431—Benson on, 433—Corrigan on, 434—Drennan on, 434—Freke on, 435—Gordon on, 436—Hayden on, 436—Head on, 438—Hudson on, 440—Hughes on, 440—Kennedy on, 442—Law on, 443—Lyons on, 444—Moore on, 447—O'Connor on, 447—Popham on, 449—Stokes on, 451.
Richardson on diagnosis of polypi of heart, 422.
Ross on typhoid fever, 470.
Royle, J. Forbes, manual of materia medica and therapeutics, *Rev.*, 168.

Scabies, treatment of, 404.
Scarlatina, dropsy and hemiplegia after, 489.
Sea-sickness, treatment of, 417.
Sea-tangle tents, George H. Kidd on, 13.
Sédillot on sub-periosteal evacuation of bone, *Rev.*, 133.
Serous membranes, abnormalities of, Lawson Tait on, 85.
Shaw, W. Parsons, on odontalgia, *Rev.*, 197.
Shinkwin, T. C., on fracture of skull, 239.
Silver, nitrate of, mode of applying, 427.
Simons Town fever, Churchill on, 62.
Skin, works on diseases of, *Rev.*, 393.
Sleeplessness in fever treated by turpentine, 371.
Sodium, bromide of, action of, Purser on, 334.
Spectacles, theory of, Scheffler on, *Rev.*, 377.
Speech, loss of in hysteria, 320—in typhoid fever, 470.
Spender on ulcers and cutaneous diseases of the lower limbs, *Rev.*, 192.
Spermatorrhea, treatment of, Morgan on, 359.
Spine, fracture of, E. H. Bennett on, 210—injury of, 495.
Squire on diseases of skin, *Rev.*, 393.
Stellwag, Von Carion, on diseases of the eye, *Rev.*, 376.
Stewart, T. Grainger, on Bright's diseases of the kidneys, *Rev.*, 143.
Stokes, Dr., on phthisis with emphysema, 216—on ulcer of stomach, 220.
Stokes, Mr., on fracture of larynx, 307.
Stomach, ulcer of, Stokes on, 220—physical examination of, 424—situation of, 425.
Suppurative fever, Braidwood on, 390.
Sulphur, use of by ancients, 489.
Swan, R. L., on splint for fracture of fibula, 50—on fracture of neck of femur, 213.
Syphilis, Barton, Hill, Lancereaux, Hughlings-Jackson, Oppert, on *Rev.*, 114—syphilitic eruptions, 397.
Syphilitic tumour of dura mater, Little on, 222.

Tabes dorsalis, Laycock on, 257.
Tait, Lawson, on abnormalities of serous membranes, 85—on the law of natural selection, by survival of the fittest, 102.
Temperature, normal, of children, 415.
Thermometric observations in pneumonia, Grimshaw on, 335.
Thompson, Sir Henry, on diseases of the urinary organs, *Rev.*, 178.
Tibia, exfoliation from, Collis on, 220.
Townsend on Scarlatinal dropsy, 487.
Trachoma, Stellwag on, 382.
Trautvetter on intestinal obstruction, 426.
Trichiasis, treatment of, 389.
Truman, Edwin, archives of dentistry, *Rev.*, 197.
Tubercle, inoculation of, 416.

Tumour, sub-peritoneal fibrous, Harrison, 84—Cystic of breast, M'Donnell on, 208—Fibrous of uterus, Bennett on, 218.
Typhoid fever, treatment of, 414—loss of speech in, 470—etiology of, 497.

Urinary organs, Sir Henry Thompson, *Rev.*, 178.
Uterine polypi, George H. Kidd on, 10.
Uterus, retroflexion of, Lombe Atthill on, 39.

Valvular disease of heart, treatment of, 421.
Varicose diseases of lower extremities, Gay on, *Rev.*, 192.
Venereal excesses, Laycock on, 257.
Venereal diseases, Barton, Hill, Lancereaux, *Rev.*, 114—statistics of, Morgan on, 360.
Voisin and Liouville on the properties of curara, 189.

Wall, John, on case of phthisis, 238.
Waltuch, Adolphe, a dictionary of materia medica and therapeutics, *Rev.*, 183.
Warburg tincture, *Rev.*, 187.
Waring, Edward John, pharmacopœia of India, *Rev.*, 168.
Water underground, influence of, on spread of typhoid fever, 497.
Wells, on diseases of the eye, *Rev.*, 376.
Wolfe, on cataract, *Rev.*, 376.
Wounds, antiseptic treatment of, William MacCormac on, 52.

Zymotic diseases, Evory Kennedy on, 269.

BOOKS RECEIVED, MAY, 1869.

1. The physician's daily pocket record. By S. W. Butler, M.D. Philadelphia: Office of Medical and Surgical Reporter. 1869.

2. A manual of the diseases of the skin. By Balmanno Squire, M.B., F.L.S.; Surgeon to the British Hospital for Diseases of the Skin. Small edition. London: John Churchill and Sons. 1869. Pp. 204.

3. The life, character, and writings of Benjamin Bell, F.R.C.S.E., F.R.S.E., author of a "System of Surgery." By his grandson Benjamin Bell, F.R.C.S.E. Edinburgh: Edmonston and Douglas. 1868. Fcap. 8vo, pp. 170.

4. On going to sleep. By Charles H. Moore, F.R.C.S. London: Robert Hardwicke. 1868. Pp. 60.

5. Thirty-first annual report of the Suffolk Lunatic Asylum. 1869.

6. Town life among the poorest; the air they breathe and the houses they inhabit. By John Edward Morgan, M.A., M.D., Oxon.; Physician to the Manchester Royal Infirmary. London: Longmans, Green and Co. 1869. Pp. 47.

7. On epidemics studied by means of statistics of disease. By Arthur Ransom, M.A., M.B., Cantab. Manchester: Powlson and Sons. 1869. Pp. 17.

8. Proceedings of the Essex Institute. Vol. v., No. viii. Salem: Essex Institute Press. 1868.

9. The "Modified Examination" of the Pharmaceutical Society, a guide to the principal points in prescriptions, dispensary materia medica and pharmacy. By F. Harwood Lescher. London: John Churchill and Sons. 1869.

10. The theory of ocular defects and of spectacles, translated from the German of Dr. Hermann Scheffler. By Robert Brudenell Carter, F.R.C.S., Consulting Surgeon to the Gloucestershire Eye Institution. London: Longmans, Green and Co. 1869. Fcap. 8vo, pp. 240.

11. Guy's Hospital Reports. Edited by C. Hilton Fagge, M.D., and Arthur E. Durham. Third series, vol. xiv. London: John Churchill and Sons. 1869.

12. On pyemia or suppurative fever, being the Astley Cooper prize essay for 1868. By Peter Murray Braidwood, M.D., late President of the Royal Medical Society of Edinburgh. London: John Churchill and Sons. 1868. 8vo, pp. 287.

13. Criminal lunacy; necessity for a Royal commission of inquiry to facilitate an alteration of the present state of the law as regards this question. The Howard Association.

14. A practical treatise on perimetritis and parametritis. By J. Matthews Duncan, Clinical Lecturer on the Diseases of Women in the Royal Infirmary. Edinburgh: Adam and Charles Black. 1869. Fcap., 8vo, pp. 249.

15. Marseille médical (ancienne union médicale de la provence). Marseille: Barlatier-Feissat Pèo et Fils. 1869.

16. Joined twins: the obstetrical and surgical management, with remarks. By A. B. Cook, A.M., M.D., Professor of the Principles and Practice of Surgery Kentucky School of Medicine. Louisville, Ky.: Bell and Co. 1869.

17. Nouveau dictionaire de médicine et de chirurgie pratiques. Tome Neuvieme, Conc-Coud. Paris: J. B. Baillière et Fils. 1868. Royal 8vo, pp. 819.

18. Pathologie de la protuberance annulaire. Par O. Larcher, Docteur en Médecine, Lauréat de l'Institute de France, and de l'Académie de Médecine de Paris, &c. Deuxieme tirage, reva corrige et augmente. Paris: P. Asselin. 1868. 8vo, pp. 207.

19. Des hemorrhoïdes par le Dr. Frédault. Extrait de l'art Medical. Paris: J. B. Baillière et Fils. 1868. Royal 8vo, pp. 270.

20. Fondements et organization de la climatologie médicale. Pat M. le Docteur Ed-Carrière, Laureat de l'Institut (Academie des Sciences). Paris: J. B. Bailliére et Fils. 1869. 8vo, pp. 93.

21. Etudes physiologiques et medicale sur quelques lois de l'organisure avec application à la médecine légale. Par J. F. Larcher, Docteur en Médecine, Lau-

reat de l'Institut de France et de l'Academie de Médecine de Paris, &c. Paris : P. Asselin. 1868. 8vo, pp. 236.

22. A theoretical and practical treatise on midwifery, including the diseases of pregnancy and parturition. By P. Cazeam. Revised by S. Tarnier. Fifth American from the seventh French edition. By W. R. Bullock, M.D. Philadelphia : Lindsay and Blackiston. 1868. Crown 8vo, pp. 1,124.

23. Disinfectants and disinfection. By Robert Angus Smith, Ph. D., F.R.S., F.C.S. Edinburgh : Edmonston and Douglas. 1869. 8vo, pp. 138.

24. Pharmacopœia of the Royal Hospital for diseases of the chest. London : John Churchill and Sons. 1869. 12mo, pp. 25.

25. The Western Journal of Medicine. January, 1869. Indianapolis : Robert Clarke and Co.

26. The nomenclature of diseases drawn up by a joint committee appointed by the Royal College of Physicians of London. London : W. J. and S. Golburn. 1869. Royal 8vo, pp. 327.

27. Summary of remedies, with their composition, doses, and uses. By John Evans, M.D., Apothecary and Chemist, 49, Dawson-street, Dublin. Manchester : J. F. Wilkinson. 1868. Pp. 63.

28. Morbid conditions of the throat in their relation to pulmonary consumption. By S. Scott Alison, M.D., Fellow Royal College of Physicians ; Physician to the Hospital for consumption and diseases of the chest, Brompton. London : H. K. Lewis. 1869. Fcap. 8vo, pp. 61.

29. Medicine in modern times, or discourses delivered at a meeting of the British Medical Association at Oxford. By Dr. Stokes, Dr. Ackland, Professor Rolleston, Rev. Professor Haughton, and Dr. Gull, with a report on mercury, by Dr. Hughes Bennett. London : Macmillan and Co. 1869. Fcap. 8vo, pp. 255.

30. Treatises on light, colour, electricity, and magnetism. By Johann Ferdinand Jencken, M.D. London : Trübner and Co. 1869. 8vo, pp. 232.

31. Collection de calculs urinaires et d'instruments de chirurgie de Dr. J. Civiale. Paris : J. Rothschild. 1869. 8vo, pp. 80.

32. Causeries scientifiques découvertes et inventions progrès de la science et de l'industrie. Par Henri de Parville. Huitième année. 1868. Deuxieme edition. Paris : J. Rothschild. 1869. Fcap. 8vo, pp. 388.

33. L'origine de la vie. Par Georges Pennetier. Preface par F. A. Pouchet. Troisieme edition. Paris : J. Rothschild. 1868. 12mo, pp. 303.

34. Atlas of portraits of diseases of the skin, issued by the New Sydenham Society: Eighth Faxiculus. Erythema nodosum, morbus pedicularis, herpes zoster.

35. A descriptive catalogue of the New Sydenham Society's atlas of portraits of diseases of the skin, compiled at the request of the council. By Jonathan Hutchinson, F.R.C.S. Part I. The New Sydenham Society. London : 1869. 8vo, pp. 70.

36. Vital law. London : Longmans, Green, and Co. Pp. 38.

37. The climatic treatment of consumption and chronic lung diseases. By John C. Thorowgood, M.D., Lond., M.R.C.S. ; Assistant Physician to the City of London Hospital for diseases of the chest, Victoria Park, &c. Third edition. London : H. K. Lewis. 1868. 8vo, pp. 100.

38. The surgical treatment of the diseases of infancy and childhood. By T. Holmes, M.A., Cantab. ; late Surgon to the Hospital for sick children. 2nd edition. London : Longmans, Greer, Reader, and Dyer. 1869. 8vo, pp. 687.

39. On catalepsy. By Adolphe Wahltuch, M.D., L.R.C.P., Lond. London : John Churchill and Sons. Pp. 22.

40. Upon certain morbid conditions of the appendages of the liver. By John W. Ogle, M.D., Physician to St. George's Hospital.

41. A series of fatal cases of poisoning. By John W. Ogle, M.D., Physician to St. George's Hospital.

42. Cases brought before the Pathological Society of London. By John W. Ogle, M.D., Physician to St. George's Hospital

43. Det kongelige norske Fredericks Universitets, Aarsberetning for Aaret. 1867. Med Bilage. Christiania. 1868. Brogger and Christiés, Bogtrykkeri.

44. Index scholarum in Universitate Regia Fredericiana centesimo undecimo ejus semestri anno MDCCCLXVIII. ab augusto mense ineante habendarum. Christiania : Brogger and Christie. 1868.

45 Generalberetning fra gaustad Sindssygeasyl for Aaret. 1867.

46. Norges officielle statistik udgiven i Aaret. 1867. C No. 4. Beretning om. Sundhedstilsbanden of Medicinalforholdene i Norge I. Aaret. 1865. C No. 5. Tabeller over de Spedalske i Norge I. Aaret. 1866.

47. Medical anatomy. By Francis Sibson, M.D., F.R.S., F.R.C.P.L., Senior Physician and Lecturer on Clinical Medicine to St. Mary's Hospital. Fasciculus

VII. London: John Churchill and Sons.

48. Pennsylvania hospital reports. Vol. ii. 1869. Philadelphia: Lindsay and Blakiston. London: Trübner and Co. 8vo, pp. 320.

49. A history of the medical department of the University of Pennsylvania from its foundation in 1765. By Joseph Carson, M.D., Professor of Materia Medica and Pharmacy in the University. Philadelphia: Lindsay and Blakiston. 1869. London: Trübner and Co. 8vo, pp. 227.

50. A new and successful mode of treating certain forms of cancer. By Alexander Marsden, M.D., F.R.C.S.E., Surgeon to the Cancer Hospital and to the Royal Free Hospital. London: John Churchill and Sons. 1869. 8vo, pp. 96.

51. A treatise on syphilis, historical and practical. By Dr. E. Lancereaux, Head of the Clinical Department of the Faculty of Medicine in Paris. Vol. ii. Translated by G. Whitley, M.D. The New Sydenham Society. London. 1869. 8vo, pp. 379.

52. Discoveries in science by the medical philosopher; an oration delivered on the ninety-sixth anniversary of the medical society of London. By Sir G. Duncan Gibb, Bart., M.D., LL.D. London: Henry K. Lewis. 1869. Pp. 62.

53. The laws of vital force in health and disease, or the true basis of medical science. By E. Haughton, A.B., M.D., M.R.C.S.E. Second edition. Revised and enlarged. London: John Churchill and Sons. Pp. 88.

54. The normal temperature in children. By James Finlayson, M.B., late House Surgeon to the Clinical Hospital and Dispensary for Children, Manchester. Glasgow: Dunn and Wright. 1869. Pamphlet, pp. 19.

55. The British journal of homœopathy. April, 1869. London: Henry Turner and Co.

56. Remarks on Dr. Sayre's paper, entitled "A new operation for artificial hip-joint in bony anchylosis." By Louis Baner, M.D., of Brooklyn. New York: D. Appleton and Co. 1869. Pamphlet.

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review. Churchill.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by W. Braithwaite. Simpkin and Co.
4. The Half-yearly Abstract of the Medical Sciences. Churchill.
5. Pharmaceutical Journal. Churchill.
6. The Lancet.
7. The Medical Times and Gazette. Churchill.
8. The British Medical Journal.
9. The Asylum Journal of Mental Science. Churchill.
10. The Glasgow Medical Journal. Mackenzie.
11. The Athenæum.
12. The Dublin Medical Press.
13. The Westminster Review. Trübner.
14. Transactions of Obstetrical Society. London: Longmans.
15. Journal of Cutaneous Medicine and Diseases of the Skin. Edited by Erasmus Wilson, F.R.S. Churchill.
16. The Practitioner; a Monthly Journal of Therapeutics. Macmillan and Co.
17. The Journal of Anatomy and Physiology. Macmillan.

INDIA.

18. The Indian Annals of Medical Science. Calcutta: Lepage and Co.
19. Transactions of the Medical and Physical Society of Bombay.
20. The Madras Quarterly Journal of Medical Science. Madras: Gantz, Brothers.

AUSTRALIA.

21. The Australian Medical Journal, Melbourne: Wilson and Mackinnon. London: H. Baillière.

AMERICA.

22. The American Journal of the Medical Sciences. Edited by Isaac Hays, M.D. Philadelphia: Blanchard and Lea.
23. The American Journal of Science and Arts. Conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. New Haven.
24. The American Journal of Insanity, Utica, N.Y. State Lunatic Asylum.
25. The American Journal of Obstetrics and Diseases of Women and Childbed. New York: Moorhead, Bond, & Co.
26. The Cincinnati Lancet and Observer. Cincinnati.
27. Canada Medical Journal. Montreal: Dawson, Brothers.
28. The New York Medical Journal New York: Muller and Mathews.
29. The Philadelphia Medical and Surgical Reporter.
30. The Richmond and Louisville Medical Journal.
31. The Medical Record. New York: Wood & Co.
32. The New Orleans Journal of Medicine. Trübner.
33. The Western Journal of Medicine. Indianapolis, Ind., U.S.A.: Trübner.

AMERICA.—*Continued.*

FRANCE.

34. Gazette Médicale de Paris. Paris.
35. Gazette Hebdomadaire de Médecine et de Chirurgie. Paris: Victor Masson.
36. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue de nouvelles scientifiques, nationales et étrangeres, &c. Paris: Labé.
37. Journal de Médecine de L'Ouest. Nantes: Mellinet.
38. Journal de Pharmacie et de Chimie, &c. Paris: Victor Masson.
39. L'Union Médicale. Paris.
40. La Lancette Française, Gazette des Hôpitaux civils et militaires. Paris.
41. Revue Médicale Française et étrangère. Publié par le Docteur Sales-Girons, Paris.
42. Archives Générales de Médecine. Paris: Asselin.
43. Bulletin de l'Académie de Médecine. Paris: Baillière.
44. Mémoires de l'Académie de Medecine.
45. Revue de Thérapeutique Médico-Chirurgicale. Paris: Dr. A. Martin-Lauzer.
46. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecines. Par Lucas-Cham-pionnère. Paris.
47. Journal des Connaissances Médicales et Pharmaceutiques. Paris.
48. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Paris: V. Masson.

FRANCE.—*Continued.*

49. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Par le Docteur Debout. Paris.

50. Répertoire de Pharmacie. Par M. le Dr. Bouchardat.

51. Gazette Médicale de Strasbourg.

52. Journal de Médecine de Bordeaux.

53. L'Union Médicale de la Gironde, Bordeaux.

54. Annales D'Hygiène Publique et de Médecine Légale. Paris.

55. Gazette Médicale de Lyon. Dirigée par le Dr. P. Diday.

56. Montpellier Médical Journal mensuel de Médicine. Montpellier: Boehm et Fils.

57. Journal de Médecine Mentale. Par M. Delasiauve. Paris: Masson et Fils.

58. Archives de Médecine Navale. Paris: Baillière.

59. Mémoires et Bulletin de l'Académie Royale de Médecine de Belgique, Brussels.

BELGIUM.

60. Annales D'Oculistique. Brussels.

61. Annales et Bulletin de la Société de Médecine de Gand.

GERMANY.

62. Zeitschrift für rationelle Medicin. Herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Heidelberg and Leipzig: C. F. Winter.

63. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Prague: Karn André.

64. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt Von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel.

65. Wochenblatt der Zeitschrift der k. Gesellschaft der Aerzte in Wein (Beilage zu den Jahrbüchern). Redigirt von A. Duchek, C. Langer, A. Schauenstein. Leipzig: Hinrichs.

66. Deulsches Archiv. für Klinische Medicin. Leipzig: Vogel.

PRUSSIA.

67. Archiv für pathologische Anatomie und Physiologie, &c. Herausgegeben von R. Virchow. Berlin: G. Reimer.

68. Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medicin. Herausgegeben von Damerow, Flemming, Roller durch Heinrich Laehr. Berlin: Hirschwald.

69. Berliner Klinische Wochenschrift. Berlin: Hirschwald.

70. Archiv für Klinische Chirurgie Herausgegeben von Dr. B. von Langenbeck. Berlin: Hirschwald.

71. Monatsschrift für Geburstkunde und Frauenkrankheiten. Berlin: Hirschwald.

HOLLAND.

72. Archiv für die Holländischen Beiträge zur Natur-und Heilkunde, Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam, Utrecht: C. Van Der Post.

NORWAY.

73. Norsk Magazin, for Lægevidenskaben. Udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. A. W. Münster. Lund: Voss. Christiania: Feilberg and Landmark.

SWEDEN.

74. Hygiea, Medicinsk och Farmaceutisk Manads-skrift. Stockholm.

DENMARK.

75. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Literaturselskab. Redigeret af Dr. K. Brüniche. Copenhagen: Reitzels.

ITALY.

76. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna.

77. Giornale Veneto di Scienze Mediche.

78. Lo Sperimentale Giornale Critico di Medicina e Chirurgia per servire ai Bisogni dell 'Arte Salutare. Direttore Prof. C. C. M. Bufalini. Florence.